

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2041.—VOL. XLIV.

LONDON. SATURDAY, OCTOBER 3, 1874.

WITH SUPPLEMENT. PRICE SIXPENCE. PER ANNUM, BY POST, £1 4s.

**M**R. JAMES H. CROFTS, STOCK AND SHARE BROKER,  
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.  
(SUCCESSOR TO JAMES CROFTS).

Established 1842.

BUSINESS transacted in every description of BRITISH and FOREIGN Stocks and Shares, and in all COLLIERIES and IRON Shares.

SPECIAL BUSINESS in shares not having a general market value.

COLLIERY SHARES FOR SALE—5 Bilson and Crump, £7 1/2%; 10 Cardiff and Swansea, £3 1/2s. 9d.; 110 Clee Hill, 9s.; 200 Thorp's Gawber Hall; and 10 Welsh Freehold, £3 2s.

SPECIAL BUSINESS in Flagstaff, Emma, Sweetland Creek, and Last Chance.

Business transacted in all Mining Shares.

Bankers: City Bank, London; South Cornwall Bank, St. Austell.

**M**RS. WILLIAM H. BUMFUS, STOCK AND SHARE DEALER, AND MINING AGENT,  
44, THREADNEEDLE STREET, LONDON, E.C.

Transacts business, at best market prices, and free of commission, in—

British, Foreign, and Colonial Stocks and Bonds.

Railways, Banks, Gas, and Insurance Shares.

Colliery and Iron Companies.

Telegraph, Tramway, and Miscellaneous Shares, and all Securities dealt in on the London Stock Exchange.

Purchases and Sales negotiated in Unmarketable Stocks and Shares.

Speculative Accounts opened for the Fortnightly Settlement.

Applications are invited for the undermentioned Shares at prices annexed, and Offers for those lots where no prices are named:—

15 Ashton, 4s. 25 Penrhyn, 22s. 6d.

40 Birdeye Creek, £2 8s. 6d. 30 East Cardon, 19s. 6d.

70 Bog, 6s. 9d. 45 East Grenville, 50 Port Nigel, 32s. 6d.

10 Bilson and Crump, 50 Flagstaff, £3. 100 Port Phillip, 13s. 6d.

40 Bampfylde, £2 6s. 6d. 100 Frontino, 9s. 6d.

25 Blue Tent, 40 Glaisdale Quarry, 40 Richmond, £6 13s. 9d.

100 Chantales, 12s. 9d. 10 Great Laxey, £12 1/2%.

40 Chapel House, 24%. 20 Sweetland Creek, £2 13s. 9d.

50 Cathedral, 22 2/3%. 100 Last Chance, 19s. 6d.

30 Cedar Creek, 27s. 6d. 50 Ladywell, £2 17s. 6d.

100 Marke Valley, 21s. 50 South Prince Patrick, 50 South Prince Patrick.

1 Carn Bras, £5 6s%. 100 Tecomia, 12s. 9d.

25 Chicago (Silver), 70 Malpas, 16s.

75 Clew Hill Coll., 9s. 100 Malabar, 15s. 9d.

30 Cardiff and Swansea, 20 Colorado Terribilis, £3 1/2%. 5 Van, £23 1/2%.

20 Dolepath, £4 6s%. 40 New Querbara, £23 1/2%.

15 Dartington Iron, 10 East Lovell, £11 1/2%.

100 Old Trebutt, 12s. 9d. 50 New Sharlstone, 15 Welsh Freehold.

40 Emma (Silver), 29s. 200 Penstruthal, 11s. 3d.

70 New Ynwy, 27s. 6d.

70 Old Chiverton, 40 Prince of Wales, 12s. 6d.

40 Prince of Wales, 12s. 6d.

W. H. B. is a BUYER of Enginehill and Clee Hill Colliery Shares. Sellers please state number and lowest price.

\* Holders wishing to dispose of Shares may avail themselves of the above Medium, free of charge. Particulars of Shares for Insertion (with lowest limits) should be delivered not later than Four P.M. on Fridays.

Advantage should be taken of the present favourable opportunity for securing shares in SOUND Mines and Collieries.

W. H. B. devotes Special attention to this class of Security, which, if a Judicious selection be made, will pay remarkably well, either as an INVESTMENT OR SPECULATION. The Shares of several First-rate Properties may now be obtained at extremely low prices, and cannot fail to improve very considerably in Market Value within the next few months.

Reliable Information and Advice given to intending Investors and others on application.

Bankers: The National Provincial Bank of England, E.C.

**M**RS. E. J. BARTLETT, STOCK AND SHARE DEALER, No. 30, GREAT ST. HELEN'S, LONDON, E.C., transacts business at best prices in every description of security.

OFFERS WANTED FOR—8 Minera and 50 Wheal Whisper shares.

\* PRINCE PATRICK.—E. J. B. has FOR SALE, 100 Shares (£1 paid). The mine is paying regular dividends, and the reserves of ore valued at some thousands of pounds.

JOHN RISLEY (SWORN), STOCK AND SHARE BROKER, 77, CORNHILL, LONDON.

Bankers: London and Westminster.

Turkish Six Per Cent. Loans of 1854, 1858, 1862, 1865, and 1871, in all probability, will command par price (100) within a short period. The interest due half-yearly on the tribute loans of 1854 and 1871, is paid into the Bank of England by the Egyptian Government direct. These are as good as any 6 per cent. guaranteed stock. Business transacted on the usual commission.

FERDINAND R. KIRK, STOCK BROKER, 5, BIRCHIN LANE, E.C.

Consols, Foreign Bonds, Railways, and every security quoted on 'Change bought and sold. Fortnightly accounts opened.

Bankers: London and Westminster, and City Bank.

BUYER—30 Cardiff & Swan., £3 1/2%. 50 Gold Run, 8s. 6d.

30 Bilson & Crump, £10 1/2%. 10 Birdseye, £2 1/2%.

SELLER—10 Thop's Gawber, 10 Whitehaven Iron, £2. 5 Henry Briggs, £2 6s.

30 Bilson & Crump, 10 Clee Hill, 10s. 30 Tillywyd, 21s.

10 Padsway Coal, £10. 20 Silkywood Fall, £2 1/2%. 20 Chapel House, 24.

Thop's Gawber pay 40 per cent. Bilson and Crump, 30 per cent. These and Gladysdale, with Welsh Freehold, will pay well to buy.

BUSINESS in Tankerville, Frontino and Bolivia, Javall, Eberhardt, Nant-y-Glo, Newsteet Chemical, Central Swedish Iron, and others.

**M**RS. W. ILLIAMS WARD (late WARD and LITTLEWOOD), 6, CROSBY HOUSE, 95, BISHOPSGATE STREET WITHIN, E.C., DEALS IN ALL KINDS OF STOCKS AND SHARES, for cash or on the account.

**M**RS. W. TREGELLAS, 122, BISHOPSGATE STREET WITHIN, E.C.

Deals in all descriptions of Stocks and Shares at close market prices.

**M**RS. HENRY MANSELL, STOCK AND SHARE DEALER, 14, GREAT WINCHESTER STREET, LONDON, E.C.

E. M. recommends the purchase of COLORADO TERRIBLE shares.

**M**RS. THOMAS THOMPSON, JUN., 1, PALMERSTON BUILDINGS, BISHOPSGATE STREET, LONDON, E.C.

Some valuable hints as to the purchase of mining shares will be found in Mr. Thompson's "Investment Circular" for October now ready, post free, price 6d.

**M**ESSRS. ENDEAN AND CO., STOCK AND SHARE DEALERS, 85, GRACECHURCH STREET, LONDON, E.C.

Government and every negotiable Stocks dealt in for cash or account. Order and telegram punctually attended to.

We advise immediate application and purchase of the BAMPFYLD and LLAN CYRUS shares. A rise in price is inevitable.

**M**ESSRS. W. DUNN AND CO., STOCK AND SHARE DEALERS, 8 AND 4, GREAT WINCHESTER STREET BUILDINGS, LONDON, E.C.

Orders received and commissions executed.

Bankers: National Provincial Bank of England.

**M**RS. GEORGE BUDGE, STOCK AND SHARE DEALER, No. 4, ROYAL EXCHANGE BUILDINGS, LONDON, E.C.

(Established 24 years.)

FOR SALE, 150 Creween and Wheal Abraham, fully paid, 12s. 6d. net.

**G**. E. SIMPSON, STOCK AND SHARE DEALER, 6, GREAT WINCHESTER STREET BUILDINGS, LONDON, E.C. will SELL the FOLLOWING SHARES, free of commission:—

100 Bampfylde, £2 7s. 6d. 5 East Lovell, £11 1/2%. 5 Roman Grav., £13 18 9

30 Chapel Creek, £2 10s. 30 Flagstaff, £3 1s. 3 2 St. Ives Consols, £9 15

30 Chantales, £2 2s 6 35 Grawton, 10s. 10 Sweetland Creek, £2 13 9

30 Gladysdale, 12s. 9d. 30 Ladywell, £2 18s. 9d. 5 Tankerville, £7 10s.

30 Gladysdale, £2 6s. 30 Marke Valley, 22s. 3d. 100 Unity Wood, 6s. 6d.

30 Emma, 4s. 6s. 30 Pennerley, £1 1s. 3d. 20 Van Consols, £2 4s 6d

30 New Cwmbran, £2 1s. 6d. 20 Blaenavon, £2 18s. 6d. 5 Wheal Kitty, £2 7s. 6

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30 New Cwmbran, £2 1s.

## THE NASCENT COPPER PROCESS.

The PROPRIETORS of this PATENT METHOD of TREATING LOW-CLASS SILVER and COPPER ORES are PREPARED to GRANT LICENSES for its USE at LOW ROYALTIES.

There is hardly a Mixed Metal mine in the world but may be made to pay dividends under this system.

All communications respecting the above should be addressed to—

MESSRS. EMMENS BROTHERS AND CO., 8, OLD JEWRY, LONDON, E.C.

Now ready, royal 8vo., 764 pp., cloth, with over 200 Illustrations, price 3s.

## ELEMENTS OF METALLURGY;

A PRACTICAL TREATISE ON THE ART OF EXTRACTING METALS FROM THEIR ORES.

By J. ARTHUR PHILLIPS, M. Inst. C.E., F.G.S., F.C.S., &c.,

Ancien Elève de l'Ecole des Mines, Paris; Author of "Mining and Metallurgy of Gold and Silver," &c.

The statistics and analyses here given represent both labour and time which it is difficult to estimate. \* \* \* The work will be eagerly sought for by Students in Science and Art, as well as by practical Workers in Metals."—*Colliery Guardian*.

London: CHARLES GRIFFIN AND COMPANY, 10, Stationers' Hall-court.

FIRST ISSUE OF 2000 SHARES, OF WHICH 235 HAVE BEEN APPLIED FOR AND ALLOTTED TO THE VENDORS.

THE GREAT RAKE LEAD MINING COMPANY (LIMITED).

Registered under the Companies Act, 1862, whereby the liability of the shareholders is limited to the amount of their shares.

Capital £25,000, in 25,000 Shares of £1 each.

PAYABLE—5s. per share on application; 5s. on allotment; 5s. in two months; and 5s. in four months after allotment.

## DIRECTORS.

SAMUEL LOVICK, Derby.

EDWARD CHARLES SWINDEN, Derby.

GEORGE BAGHURST, Derby.

WILLIAM NICHOLSON KAY, Derby.

EDMUND FEARN, Derby.

WILLIAM PARKES, Birmingham.

WILLIAM BALL, Derby.

BANKERS.

W. and S. EVANS AND CO., Derby.

SOLICITOR.

JOSEPH STONE, Esq., Wirksworth.

AUDITOR.

JOHN LEWIS, Esq., A.L.A., Public Accountant, Birmingham.

SECRETARY.

CHARLES PARKER, 3, Madeley-street, Derby.

OFFICES.—BANK CHAMBERS, TENNANT STREET, DERBY.

## PROSPECTUS.

This company is formed for the purpose of still further opening out and extending those valuable properties, consisting of the Great Rake, Little Rake, and Young Bonny Lad Mines, also the Harbro Walk, Rake, Flats, and Lums titles, and the same have, by agreement of contract and by deed, been duly sold and transferred to this company, and registered in the Barmaster's books for the Wapentake of Wirksworth under the Derbyshire Mining and Mineral Court Act of 1852 (15 and 16 Vict., cap. 173).

This mining sett is situated near Brassington, in the Sokes and Wapentake of Wirksworth, Derbyshire, and is subject to the Mineral and Mining Customs Act of 1852.

From close inspection of the Great Rake Mine, it is evident that there has been obtained in immense quantities, and of a superior quality, but from the very imperfect and difficult method adopted for raising it to the surface the value was thereby materially decreased; this disadvantage will be considerably overcome by the introduction of more improved lifting apparatus, and by the employment of means more in accordance with modern engineering.

The Great Rake Mine contains, in addition to its valuable lead deposit, a most extensive and apparently unlimited vein of caulk and barytes, which bears a good commercial value, and is in great demand; there are about hundreds of tons of small vein ore lying upon the surface, which has been imperfectly dressed by the old workers, and it is calculated if properly crushed and washed this would more than defray the cost of the necessary machinery.

The Little Rake Mine is adjoining the Great Rake, and is a continuation of the same vein. There is a shaft sunk to 18 fms., and from all appearances it is rich in lead ore.

Young Bonny Lad Mine is a further continuation of Little Rake, and in addition to its lead ore has a rich deposit of calamine, also a fine vein of barytes. The directors have commenced sinking a shaft on this mine, and when at the proper depth intend to drive carriage ways for working both the Great Rake and Little Rake Mines, and some valuable ore has been met with in course of sinking.

The Harbro Rake Mines, Lums, &c., are situated north-easterly of the other mineral titles, and about  $\frac{1}{2}$  mile therefrom. They command an extensive range of more than 30 acres (or 870 yards) in length, and are in close proximity to the Ball Meer and Charratt old productive mines. The Harbro Walk and Rake were worked with great success by the former proprietors, and the result from working at small depths below the surface realised large quantities of excellent blue, white, or linetite, or green ore. There are immense mounds or heaps left on the surface by the old miners that would be most remunerative if proper crushing and washing machinery were employed to extract the ore therefrom. These mines being bounded nearly their entire length by the High Peak Railway, offers facilities for the transit of their minerals which are seldom met with in lead mines in this country.

The vendors have agreed to sell the property for 8000 shares of £1 each, fully paid-up. The directors have decided to issue 2000 shares for subscription. The vendors have applied for and been allotted 235 shares.

It is estimated that the first issue of shares will realise sufficient capital to procure the requisite machinery and cost of working until the mines are remunerative.

The mines are purchased on most advantageous terms, and the vendors accept the whole of the purchase-money in fully paid-up shares.

Power is reserved by the directors to issue the remaining 15,000 shares, or any less number.

Copy of Memorandum of Association, contract, and deeds relating to all the above-mentioned mines, may be seen at the offices of the company upon application to the Secretary.

The Secretary is empowered to grant tickets to view the mines to persons desirous of becoming shareholders in this company.

Applications for shares to be made on the form accompanying the prospectus, and sent with the deposit money either to the bankers or Secretary of the company.

In the event of no allotment being made, the deposit paid will be returned without deduction.

MANAGER'S REPORT OF THE WORKS AT THE GREAT RAKE LEAD MINES, BRASSINGTON, DERBYSHIRE.

No. 1: I have opened out the new climbing roads to the depth of 30 fms.; at this level I have also opened a tramroad to the length of 60 yards, which shows a very fine vein of caulk, intermixed with some good samples of lead ore, which I have brought up to the surface ready for the washing and crushing apparatus. This drive is of a most interesting character, as in about 4 fathoms further west it will intersect another pipe vein, and at this point I expect to get a quantity of lead ore; this new wagon gate is running west.—No. 2: Proceeding from the engine-shaft in an easterly direction, at the depth of 40 fathoms, this point leads to what is called the Hard Hole; here we have also a good work of lead ore.—No. 3: From this point to the top wagon gate, which is about 45 fathoms in depth, we have a quantity of good stuff in both old and new workings, which has fallen down and is ready for drawing out for washing.—No. 4: The next point is called the Chain Turn; here we have also a good work of lead, and the vein runs soft and is easy to work.—No. 5: This is the wagon gate (90 yards long), which is laid with tramway and ready for use.—No. 6: Leading out of this gate is the Ladder Hole; this vein contains fine lead ore at the depth of 55 fathoms.—No. 7: This is the Spar Turn, this is also another fine vein, well intermixed with spar and lead ore.—No. 8: This is the top of the limestone; at this carriage it is flat-works, and the vein is hard and requires blasting down; this vein is very wide, and well intermixed with caulk and lead ore; at this point it yielded some of the largest lumps of lead ore found in Brassington; there have been solid lumps of ore which weighed over 1 ton.—No. 9: This is at the depth of 70 fathoms, and is called the Shak vein; here we have lead ore in four or five different points. I can point out many more places of lead ore in this part of the mine which will pay well for working. This is a mine well worth personal inspection, as the new wagon gate from the Young Bonny Lad shaft will open out a many cross-veins. The new shaft is sunk about 17 fms., and we are getting ore in course of sinking. This fine mine is only short of good roads to bring the lead to the surface. As soon as the new shaft is sunk, and the wagon gate driven up to the works, the mine will be worked to much greater advantage than formerly.—Harbro Rake, Flats, and Lums: This mine for the present we have discontinued working for the purpose of concentrating our force at the new shaft on the Great Rake. In the shaft we were working at we found good samples of ore; this shaft wants continuing down to limestone carriage, when there is every probability it will be a remunerative concern. It would be advisable to erect machinery on this mine for the purpose of washing and dressing the immense mounds of veinstuff got by the former workers.

WILLIAM FEARN.

LABORATORY AND ASSAY OFFICE, 25, FINSBURY PLACE, E.C.

For the CONVENIENCE of PARTIES having CITY ENGAGEMENTS, MR WHITE is about to ESTABLISH EVENING CLASSES, commencing at SIX P.M. Terms on enquiry as above.

MINING PROSPECTUSES AND ANNOUNCEMENTS OF PUBLIC COMPANIES should be inserted in the BARNSTAPLE TIMES, published every Tuesday, and in the DEVON POST, published every Saturday, as these papers circulate largely throughout Devon and Cornwall, where many thousand investors reside. Legal and Public Companies' advertisements, &c., a line each insertion; Trade and Auctions, 4d. a line; Wanteds, &c., 20 words, is.

Published by J. B. JONES, Boutport-street, Barnstaple, Devon to whom all orders, by post or telegraph, should be sent.

## THE MINING JOURNAL.

Stocks and Shares, paying dividends ranging from 10 up to 20, and even 50 and 60 per cent. on capital called up.

**SPECIAL BUSINESS** in the subjoined Mines:—Carn Brea, East Pool, Great Laxey, Roman Gravels, Dolcoath, South Caradon, Tankerville, Tincroft, Trearack, St. Agnes Consols, Kitty, Van Consols, Gobbett, and others. Sellers must allow time to negotiate sales of Cornish Tin Mines, as prices rule low, the tone of the demand is depressed and drooping, while the exports from Australia are likely to increase.

Mr. RICHARD TREDINICK, Consulting Engineer, has been forty years practically associated with mining, and he advises all holders of shares to ascertain at once the nature, character, and promise of those they possess.

Finance of all kinds effected by Messrs. TREDINICK and Co., and every attention and information afforded upon application at their offices, 45, Bishopsgate-street, London, E.C.

## THE TRUE SOLAR SYSTEM.

An ingeniously constructed and readily intelligible model is this year exhibited in the scientific inventions department of the London International Exhibition, by Mr. JAMES H. MILBERG, illustrative of his theory of the meandering orbits of the true solar system. He maintains that there is no such thing as one central sun, but that our sun is the first, then there is another unknown body, and so we travel on forever in meandering orbits, attracted by still greater bodies. He claims that in this way he can explain what never yet has been explained—the tangent power and tangent motion. He remarks that we believe in the endlessness of space and in other infinite solar systems, and, therefore, can with equal correctness believe that the sun does not stand still, and that the earth does not move in tangential orbits round the sun, but on the contrary. We must come, he thinks, to the conviction that the sun is attracted by an infinitely larger body, and, instead of standing still, he moves forward in an almost straight line, that the earth must move round the sun in a serpentine course, in the same manner that the moon moves round the earth; that one body cannot interrupt the other, because a larger body perpetually prevents the smaller one from doing so, and we must come to this conclusion because our whole solar system moves forward in nearly straight lines.

The sun is represented by Mr. Milberg as a large ball, moving in a nearly straight line, part of its orbit, across the middle of the model, the sun being followed by Mercury, who travels in the nearest meandering orbit. It takes Mercury about three months to travel round the sun, consequently he accomplishes this journey four times in one year; whilst the sun travels on in an almost straight line Mercury moves like a pendulum. He hurries past the sun, attains his aphelion, and then his course is attracted, and his speed diminished by the sun passing over to the opposite side; he gradually stays behind, arrives in his perihelion, where he is once more attracted by the sun and the unknown body, his speed is then again accelerated, he passes into his perihelion, and is once more hurried past the sun. The space which Mercury or any other planet has travelled over in one year is the same which the sun has accomplished, only that the planet by his pendulum-like motion has gone over more ground in the same amount of time.

The second planet is Venus, which travels round the sun in the same way, and in about seven months and a half. Then comes the third planet, the Earth with her moon, which make the journey round the sun in one year. Then follows Mars, who accomplishes his round in 23 months, whereupon the minor planets—Vesta, Juno, Pallas, Ceres, &c.—called asteroids, follow, which require four years for their time of rotation. Jupiter with his four moons, which travel round him in meandering orbits, comes next; his revolution requires 11 years and 10 months. Then follows Saturn, with his ring and his eight moons; he goes round the sun in 29 years and five months; next comes Uranus, with six moons, who requires 83 years for his journey, and last of all Neptunes with two moons, who takes 165 years to get round the sun.

The theory enunciated by Mr. Milberg has at least the recommendation of plausibility, and of applying equally to planets, comets, and fixed stars, in proof of which he shows the orbit of Encke's comet, which attains his perihelion between the orbits of the sun and of Mercury, and his aphelion between Mars and Jupiter; his time of rotation takes about three years and a third. He has also shown Biela's comet, which reaches his perihelion between the earth and Venus, and his aphelion between Jupiter and Saturn; he travels round the sun in about seven years. Although the theory is one which, of course, cannot be adopted without mature consideration and strict confirmatory tests, it is certainly worthy of investigation.

**ECONOMIC AND HEALTHFUL FIREPLACES.**—For many years past the utmost attention has been given to the designing and manufacturing of fireplaces, and of various forms of warming and cooking apparatus, by Messrs. Edwards and Son, of Great Marlborough-street; and in reply to the appeal of the Council of the Society of Arts, they have just submitted, under the title of "Improved Fireplaces," a short account of certain suggestions which they offer for economising fuel and more effectually warming apartments. They remark that, on a careful consideration of the various improvements which have at one time and another been suggested, it appears that in all improved fireplaces constructed in future provision should be made for the admission of fresh air from an external source to the neighbourhood of the fireplace, the fire should burn for a much longer period than we are accustomed to without attention, and smoke should be in a great measure prevented. Messrs. Edwards and Son are satisfied from long experience that the first point is of extreme importance, because as long as large quantities of air pass away by open chimneys, and a fresh supply is not given in sufficient quantity and in a suitable mode, we must be exposed to the evils of constant currents from doors and windows; a tendency to closeness, particularly in small rooms; of the smoke sometimes not being carried away effectually; and of down currents in chimneys, whether in actual use or not, bringing with them minute particles of soot and dust, which are deposited on the furniture. By means of chromo-lithography Messrs. Edwards and Son's arrangements for utilising every particle of heat, and at the same time securing abundance of ventilation to ensure the healthfulness of the apartment in which their improved fireplaces are used, are clearly shown. The designs are at once quaint and attractive, and carefully adapted to the requirements of the cottage or the mansion—one showing a fireplace having a raised hearth, with fender, curb, and pedestals for admission of fresh air being admirably adapted for the latter, very elegant; whilst their working man's oven and copper, with steamer for cooking, is an apparatus which can be cheaply and quickly erected, is vastly superior to a kitchener, and is in every respect worthy the attention of all proposing to construct cottages for workmen. The pamphlet, which is published by Messrs. Longman, is well worthy of careful study and consideration.

**TIPPING COAL.**—Mr. G. FOWLER, of Basford Hall, Nottingham, has patented some improvements in apparatus for tipping coal. The patentee employs a common side tippler, provided with two rings, one rotating upon a fixed centre, the other rolling upon carrying wheels; the lower half of the tippler is partly surrounded by a fixed casing, one end of which is hinged and provided with balanced levers and suitable bearings, so as to act as a door or drop.

**STEAM AND AIR ENGINES.**—Mr. J. HARPER, of Clinton Mills, British Columbia, has patented some improvements in steam and air engines. He writes:—"My said invention consists in superheating ordinary steam at the instant of putting it under the piston of a steam engine, so that the full value of the power developed by superheating it will be obtained in driving the piston. To do this I construct an engine of a peculiar style, which is at once compact and cheap, and which can be run with very little expense for fuel."

**PUMPS.**—Mr. A. V. NEWTON has patented (for Messrs. W. J. Silver and G. Attwood, of Salt Lake City) an improvement in pumps. The invention consists in a valve box fitted to turn on or around its axis within the pump case, chamber thereof, and in an annular eccentric or other suitably shaped passage in said chamber or case and around the valve box, whereby in all positions of the pump a free communication is established with the under or inner side of the valve, whilst its upper or opposite side is closed to such communication.

**HOLLOWAY'S PILLS.**—THE LIVER, THE STOMACH, AND THEIR ALLI-MENTS.—Alterations of temperature, muggy weather, a troubled mind, sedentary habits, excesses at the table, and a gay, reckless mode of life exert the most deleterious influence over the liver and stomach. When once these organs are fairly out of order great throads are quickly made on the general state of the health; the constitution, which loses the aid of two of its noblest organs, soon gives way, and diseases quickly follow, from which, if neglected, the worst consequences will inevitably result. If a course of Holloway's celebrated pills be persevered in, all will be well again, as they are the finest and noblest correctives of the blood ever known, and effect certain cures of all disorders of the liver and stomach.

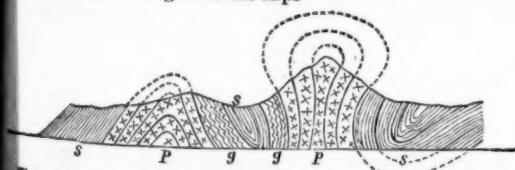
## Original Correspondence.

## A PILGRIMAGE TO ST. GOTTHARD—No. I.

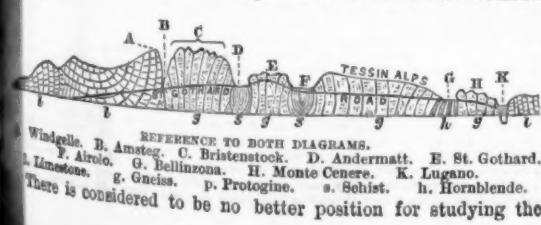
Pilgrimages prove so enjoyable, and are becoming so fashionable, that there can be no reason for confining them to any particular class; with a desire, therefore, to participate in the pastime, such as it now is, with the advantage of well-appointed mail services on the railways, and large and commodious steamers for crossing the Channel, we determined on a technical pilgrimage to St. Gotthard, although we certainly know less of the history and genealogy of the saint than of St. Edmund of Canterbury, or the other celebrity whose shrine was visited last year, but whose name we cannot at present recollect. Now, in making a pilgrimage to St. Gotthard naturally thinks upon starting from London that at least some little punishment will have to be endured in reaching the French coast, but in this case the peas were doubly boiled, for the sea was smooth as a tranquil lake, the stars shone brilliantly, and even those who had never before smelted salt water enjoyed the trip, and walked on shore at Calais in 95 minutes after leaving Dover. As the route of the Northern of France Railway is through a country not brightened by very interesting scenery, and as the stars were not sufficiently powerful to illuminate a distant landscape, we did what we considered the most sensible thing—slept out the journey to Paris, and were thus refreshed, and ready for a day's enjoyment, and to make a few business calls in that city. In the same way we arranged to leave Paris by the Eastern Railway at 8 o'clock in the evening again, and, after satisfying the German officials at Altmühlster that we had nothing liable to duty, reached Basel (Basle) about 10 o'clock the following morning, proceeding after a few minutes rest to Lucerne, so as to catch the 2 o'clock boat, and enjoy four hours or so on the lovely Vierwaldstättersee, or Lac des Quatre Cantons (Lake Lucerne). Reaching Flüelen at about 6 o'clock, and having about 20 minutes ride to the Hotel de la Clef d'Or, dinner was particularly acceptable, but as the cuisine of the house is excellent a good appetite was not at all objectionable. As we have a little rest here, we may avail ourselves of the opportunity of saying a few words connected with scientific research in the district.

With reference to the geology of the Alps, a very interesting account was supplied by Mr. E. Desor, of Neuchâtel, to a former president of the Alpine Club—Mr. John Ball, F.L.S., &c.—and in it he remarks that Ebel, and the earliest geologists and geographers saw in the Alps a series of parallel ranges, arranged in the order of their height, the loftiest occupying the centre of the chain, and forming the watershed. The central range was, on account of its position, assumed to be the most ancient, and there it was thought natural to find granite, syenite, and gneiss, while the outer ranges were believed to be formed of limestone, sandstone, and other sedimentary deposits. The results of modern enquiry have not justified this opinion. It is true that the higher peaks of the Alps are formed of crystalline rocks. Mont Blanc is composed of the protogine form of granite, Monte Rosa and the Jungfrau of gneiss and mica-schist, the Dent Blanche of talcose granite; but it is an error to suppose that all the crystalline masses are connected with lofty peaks, or that none of the higher summits are formed of sedimentary rocks. The Eiger and Wetterhorn, which are counted among the higher peaks, are formed of secondary limestone, and the same holds good of many other prominent mountains. To the modern view of Swiss geologists, he continues, belongs the credit of having ascertained the real order of succession of the strata, and the general plan of structure which prevails throughout the entire chain. Mr. Studer, who holds a foremost rank amongst Alpine geologists, recognises the existence in the Alps of a series of groups, each with a crystalline centre, sometimes parallel to each other, sometimes arranged like the squares of a chessboard. To form a correct idea of the relations between the crystalline masses and the troughs, the former may be considered as islets arising in the midst of a level plain. In the process of upheaval these islets have gradually assumed greater prominence, driving back on each side the deposits through which they have forced their way, tilting up these overlying strata, and not unfrequently reversing their original order of position. Thus has originated what geologists have called the fan structure, traceable in many of the crystalline groups.

Considering the extent of the district occupied by the Alps, and the comparatively limited opportunities of investigating their geological characteristics, it is not surprising that different opinions are held with respect to the origin of the crystalline centres. The groups of the Finsteraarhorn and the St. Gotthard are mainly composed of stratified granite. Between this granite and gneiss the transition is gradual and continuous, the gneiss passing insensibly into mica-schist and talcose slate, while these in their turn are closely connected with certain sedimentary slates and sandstones. One other deposit once thought undoubtedly igneous have been proved to be altered sedimentary rocks. Thus, the schists of Cassana, in the Grisons, having all the external character of mica-schist, have been proved to be of sedimentary origin, and belemnites have been found in the mica-schists of the Furka. The result is that the gneiss nature of most of the crystalline rocks of the Alps is questioned, with the exception of the porphyries and porphyritic granites of the south side of the chain, and geologists include in the series metamorphic rocks, not only the mica-schists and gneiss, but the semi-stratified granite of the St. Gotthard, and the so-called protogine granite of Mont Blanc. Mr. Desor explains that different conditions have prevailed in the central parts of the Alpine chain, and especially in the Swiss, Piedmontese, and French Alps. The process of upheaval has there been accomplished by more energetic agencies, acting on many neighbouring points. Intense and complicated forces have operated on the overlying stratified deposits; they have been set on end, pushed aside, and often completely turned over by the pressure of the intruding mass. The crystalline masses, on the other hand, when lifted to a sufficient height, and relieved from lateral pressure, have expanded in the direction of least resistance, and have thus produced the fan structure so characteristic of the central region of the Alps.



The gneiss and crystalline slates forming the first envelope of the nucleus lie in such cases upon its flanks, while the granitic masses, which present almost always occupy the centre of the mass, often form vast semicircular hollows, with very steep walls, in the form of an amphitheatre, as in the Mont Blanc range and at Sept Léaux, or La Bérarde, in the Dauphiné Alps. It sometimes happens, that two adjoining crystalline masses of unequal dimensions approach very near to each other, the one having the fan structure and the other the anticlinal disposition of the strata; in such cases the resulting arrangement is that indicated in the above section, given by Prof. Lory. When several crystalline nuclei approach near to each other the result is to reduce the troughs within narrow limits, the extension of the crystalline rocks having been effected, so to speak, at the expense of the sedimentary strata; this condition is illustrated in the subjoined section of the St. Gotthard

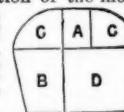


There is considered to be no better position for studying the

general plan of the architecture of the Alps than in the section exhibited to a traveller following the high road across the pass of the St. Gotthard. At the summit of the Col he finds the granitic nucleus forming a nearly level plateau, on which are several small lakes. This granite shows distinct traces of stratification, and in descending from the pass on the north side the dip is to the south, pointing, as it were, to the internal axis of the chain. The granite is followed by crystalline slates; but on descending into the broad valley of Urseren, extending by Hospenthal to Andermatt, the rock seen is a very friable slate, sometimes of very dark colour, and probably belonging to the carboniferous series. This extends to the Furka, at the head of the Urseren Thal, and the form of the valley, with its uniform and somewhat monotonous slopes, is doubtless due to the yielding nature of the slate, that has been easily excavated by agencies that have had comparatively little effect upon the crystalline rocks. At the Urner Loch—the cleft through which the Reuss escapes from the Urseren valley to descend towards the lake of Lucerne—the high road again enters among the crystalline rocks, at first in the form of gneiss or mica-slate, but gradually passing into true granite. This is the eastern extension of the nucleus of the Finsteraarhorn, which reaches to the Clariden Grat, and is then covered over by the sedimentary rocks of the Tödi and the Biferten Stock. This second crystalline mass, here deeply cut through by the Reuss, extends through the narrow part of the valley as far as Amsteg. The valley widens out below that village as it enters amongst the limestone rocks, which form on each side the peaks of the Windgelle and the Urirothstock.

The descent on the Italian side is not less steep than on the north side, and leads over the same granite rocks that form the plateau, but the dip is now to the north. At the base of the slope at the village of Airolo the valley is parallel to the granite nucleus, but the rocks in this trough are no longer crystalline in texture. Following the Val Leventino to Faido the road enters upon a third crystalline mass, that of Tessin. This is more extensive, but less lofty and broken in outline than those already mentioned. The rock is gneiss, very uniform in composition, which extends as far as Bellinzona. Here the mass of the Tessin Alps is interrupted by the appearance of a broad band, crossing the country in a south-westerly direction to Biella, and marked by the presence of metamorphic rocks, accompanied by others of igneous origin, in which hornblende is the prevailing mineral. South of this is the crystalline group of the Italian lakes, which extends in the form of gneiss to the low ridge of the Monte Ceneri, crossed by the road from Bellinzona to Lugano. The latter city lies in the midst of the exterior covering of the sedimentary rocks, which are broken here and there by eruptive masses of porphyry. Thus the arrangement of the rocks traversed on the south side of the central range is essentially the same as that on the north side, but they are less extensively distributed, and there are no instances of a reversal of the natural order of superposition, such as may be seen in some places in the valley of the Reuss. The granite of the St. Gotthard is well known for its large crystals of felspar and the rare minerals which it contains; it is confined, however, to the centre of the range, passing on each side into gneiss, which in its turn shows a gradual transition to mica-schist, abundantly charged with garnet crystals. The fan structure is very evident throughout the group. Among the minerals found in the granite are several containing oxide of titanium—rutile, anatase, and brookite; besides which are hematite, fluor spar, apatite, axinite, tourmaline, and remarkably fine quartz crystals.

The acquisition of this little piece of information renders the remainder of the journey much more interesting, and at the same time gives an opportunity of enjoying the magnificent scenery, instead of troubling oneself with scientific investigations. Having had the good fortune at Altendorf to make the acquaintance of Mr. Levoiseau (who seems to be the private secretary of Mr. L. Favre, the enterprising contractor for the tunnel), and as it happened that Mr. Favre was himself going up to the tunnel that day, there was no difficulty in making a careful examination of everything, whether connected with the machinery or the tunnel itself. Leaving Altendorf by the diligence at 8 o'clock in the morning, Göschenen (where the northern end of the tunnel commences) is reached by about noon, and having taken up quarters at the Hotel Göschenen which is decidedly the best in the place, we returned to the Cheval, or Rossli (where Mr. Favre puts up), to dejeuner, and then went with him and Mr. Levoiseau to the tunnel. This saved all trouble in getting orders, which it needs scarcely be said are required to gain admission to the works under ordinary circumstances, for of course the presence of visitors is very undesirable where work is going on. The engineers' shop is most completely furnished, and some very excellent machine tools are employed for repairing and altering the various drills, &c., in use. The François-Dubois, the Ferroux, and the McKean are all in use; some of the latter not being yet unpacked, but the two former kinds are being gradually replaced by the latter, and as there is no patent law in Switzerland it is not difficult to make all practicable improvements to enable old stock to be worked up. The simplicity of the McKean drill is very highly spoken of by Mr. Favre, and it is anticipated that when all the drills used are of this form the end will be advanced as much as 10 metres (nearly 6 fms.) per day, if the debris can be removed so quickly; upon which point there is no serious apprehension, owing to the facility with which the debris of 6 metres per day has been dealt with, and the time to spare at that speed. Indeed, it requires but half-an-hour's conversation with Mr. Favre to discover that he is complete master of every detail of his profession, from the boring and charging of a hole to the construction of the most delicate portions of the machinery he has called to his aid. In the making of the tunnel the mode of operation is somewhat peculiar, the leading heading not being, as is usual, put in at the bottom of the projected tunnel, but immediately below the summit of the arch, somewhat thus:



The heading A, about 2 metres high and 1 metre wide, is the leading heading, or gallerie d'avancement, and at the Göschenen end is at present in between 1300 and 1350 metres, whilst B is the following tunnel, or cunette, at present about 900 metres in. The parts marked C and C are at present being worked away by hand, and are kept well in advance of the cunette. Railways are laid on the bottom of B and on the top of D, the latter terminating with an incline toward the mouth of the tunnel, so that the whole of the debris from A, B, and C can be quickly loaded into trucks, and hauled out by the small locomotive worked by a cylinder of compressed air about 5 metres long by 1½ metre diameter.

That there may be no delay in consequence of bringing the railway along D, and thus keeping the ground standing, Mr. Favre has devised a very ingenious hydraulic lift, mounted on a small truck, for lowering the loaded trucks and raising the empties. By this apparatus the cattle coming from the leading heading will near the end of the cunette be transferred without change of truck to the railway on the bottom of B, so that they will be able to remove the ramp altogether, and keep D but little behind the cunette. The order and precision with which the work is carried on reflects the utmost credit not only upon Mr. Favre himself, but upon all his officers. There are the day shifts and the night shifts, each shift comprising full pairs of boring machinists, mariniers, and fillers. The first mentioned drill holes rather more than a metre deep, run back the machine and retire, their places being quickly taken by the mariniers, who charge the holes and fire them; and as soon as the smoke has sufficiently cleared away the fillers load the trucks, which are at once hauled out of the tunnel by the little locomotive. The explosive used is a dynamite of high quality, manufactured by Mr. Favre near Lake Lucerne, and transported thence by ordinary wagon to the tunnel. To say that both the machinery and explosive work is satisfactory is needless, since it has already been mentioned that no less than 6 metres per day has been removed—a rate of working which would place many of our home mines in a dividend-paying condition, although at present they are merely struggling for existence. A few metres of the masonry is put in at the mouth of the Göschenen end of the tunnel, and Mr. Favre states that he intends to put in a fair sized ventilating tube immediately under the crown of the arch, and for the entire length, so that there can be no doubt that the air will at all times be good.

Leaving Göschenen, a beautiful though rather steep walk of a few miles takes us over the Devil's Bridge, where torrents form a fine cascade, to Andermatt. As one can always outwalk the diligence at this part of the road, it is much more agreeable to walk, and thus gain half-an-hour to look at the minerals, photographs, and other curiosities at the little cabin opposite the Belle Vue Hotel, but it will be found that with the attractions of chamois and fox skins dressed *au naturel*, and views of the more attractive points already passed, 100 frs. are disposed of long enough before the diligence comes up to take you out of the way of temptation. The walk from Göschenen will have produced a good appetite for dinner time, for which about 20 minutes is allowed at Andermatt, and we then go on by way of Hospenthal to the Hospice of St. Gotthard, the steepness of the road again permitting a walk; indeed, having passed across country for, perhaps, a couple of miles until we reached the summit, the diligence was so long coming up that one almost fears he is on the wrong road, but as there is one only he is perfectly safe. At the Hotel de la Prosa, close by the Hospice, our five horses (two in the shaft and three leaders abreast) are changed for two. La Prosa may be considered the half-way house, leaving about 18 kilometres to Airolo, but the second half of the journey is performed in one-sixth of the time of the first. The roads which incline at about 1 in 10 double and redouble, so that one can see 8 or 10 roads successively beneath each other, and as both diligences are descending at full gallop, the one behind appears likely to turn over upon you, and it seems impossible that either will be able to turn sharply enough to escape going over the precipices terminating the several inclines. Little more than an hour, however, brings one to Airolo, whence the other end of the tunnel is being driven; and although the announcement equivalent to "No admission unless employed on the works" is very prominent in several places, there was every politeness in giving information and permitting inspection of all parts of the work. The orderly arrangements are as readily observable as at Göschenen, but the contrast of the dirt at the Airolo end (which is only equalled by the filthiness of the town itself) with the Göschenen end is striking.

The Airolo end is not so far in—about 1100 metres—as the Göschenen end, and the progress has been slower. The water is very quick, nearly knee-deep, and they have recently passed through a band of hard quartz, 70 metres thick. The consequence is that they have only got through 2 metres per day for some time (though a fathom a day in hard rock would be considered first-rate work in English mines), but as they are now in the granite again they will no doubt soon progress more rapidly. The machinery works well. Mr. Colladon's compressors are slightly modified in detail here, and there were half-a-dozen or so of the McKean drills which had been so recently delivered that they were not unpacked. Of the machinery, however, we must speak in another notice, and for the present will only say that they have put in the Airolo end of the tunnel in a direct line with that at Göschenen, to facilitate accuracy and more readily to get tip room, although the curve in the permanent way will ultimately extend some distance into the tunnel. The aqueduct beneath the floor, 1 metre deep and 1 metre wide, is being cut very rapidly, the McKean drill being alone used, and as soon as it is up to the end will of course facilitate letting down the water and make the tunnel much more pleasant to work in. Much is to be learned from a visit to the tunnel, and as the experience gained has permitted many important improvements in the machinery to be introduced the description of the latest, which will hereafter be given, will be of very general interest.

## A NOTABLE ANNIVERSARY—THE FIRST RAILWAY.

Forty nine years and a day have elapsed since the formal opening on September 27, 1825, of the first public railway. The Stockton and Darlington Railway has passed out of existence as a distinct institution, but yet it figures as a section of the gigantic monopoly of the North—the North-Eastern Railway, and the district which gave birth to it will not willingly let die the story of its fame. It may be interesting to recall the facts recorded, and to add others gathered from the memories of the few survivors of the early days of the first railway.

Early in this century communication by canal or railway between the port of Stockton and the coal districts to the west of the county of Durham was projected. Committees were appointed to forward the project at Darlington in 1812 and at Stockton in 1818, and that at the latter place issued an elaborate report drawn up by Mr. G. Leather, at the instance of the late Mr. Christopher Tennant, of Stockton, in favour of a canal from Portrack, near Stockton, to Ewenwool Bridge, near West Auckland. Slowly, however, opinion of capitalists gravitated to the project of a railway, as it was then called; and in 1819 application to Parliament was made for power to construct such. The application was defeated, and in the following year a second application also fell to the ground. In 1823, however, the application of the Stockton and Darlington Company was granted by the Legislature. The company seems to have taken time by the forelock, for on May 23, 1822, the first rail of the railway was laid near St. John's Well, Stockton, by Mr. Thomas Meynell, of Yarm, the Chairman of the company. Sixty shareholders composed the company; the length of the line was 25 miles, and its construction occupied above three years. On Sept. 26 the committee and directors had a preparatory trip on the line, and on the following day the formal opening took place—the first locomotive conveying a vast body of passengers, and goods estimated at 90 tons, from Brusselton Incline to Stockton.

The account given by one of the few recorders of that day has been so often quoted that repetition is unnecessary. Of those who made the journey most have passed over it into the silent land, the chief and almost sole survivor now is Mr. Henry Pease. Little expectations had the company of passenger traffic, and one "coach"—mounted on flanged wheels, and named the "Experiment," was their sole provision for it. For eight years its successors were horse drawn, and constant quarrels arose between the drivers of the quadrigas and the drivers of the engines used for merchandise. When Middlesborough was forming, coaches such as Union and Express were first locomotive-propelled by the Wilberforce. The rest we know; and know, too, that despite deficiencies, the motto has been appropriate which was chosen to emblazon Experiment by a clergyman named Peacock, of Stainton, near Stockton—*periculum privatum utilitas publica*. The company ordered three engines of Messrs. R. Stephenson and Company—Locomotion, the first engine employed on a public railway, which was the sole engine employed in 1825; and two others which commenced work in the following year—Hope and Black Diamond. It was soon found that repairing works were needed for the engines; and in 1825 a narrow barn-like shed was erected at Shildon. It consisted of blacksmiths' shop, with two smiths' fires, in which less than half a dozen smiths worked; a joiners' shop, with a similar number of hands, and a shed to hold two small engines.

The measure in which this first railway has influenced the district it penetrates cannot be better told than by brief figures showing the difference in the populations then and now. It may, however, serve to show the magnitude of that system, founded by a Stephenson and a Pease, if we quote from official statistics a few figures proving the extent of the development of the railway system in the North. Instead of one engine, the successors of the Stockton and Darlington Company have 1155; in place of one coach they have above 1500; the line has grown from 25 miles to 1311; the dividend is more than threefold; the capital, from 160,000*l.*, is now above 48,000,000*l.* The two small sheds for repairs have found such huge successors that their cost is above 380,000*l.* yearly; and the amount of train mileage run is enormous—approaching 20,000,000 miles yearly. From Doncaster and Hull to Berwick, from Scarborough to Carlisle, from Tebay and Penrith to Saltburn—the chief of the great northern counties are served by the aggregate of lines in which the identity of the ancient mother of locomotion is sunk. Five years after the opening of the Stockton and Darlington line its rolling stock consisted of 59 chaldron wagons, 53 wooden ones, and 29 three-quarter chaldron ones—the estimated value of which was under 1200*l.* If now the rolling stock of the company were gathered, both lines from Hexham to Newcastle would be blocked,

the line to Durham would be filled, to Morpeth would be similarly used, and every line and branch for miles round Newcastle would be occupied with about 70,000 conveyances, costing capital some £5,000,000. Railways have revolutionised England; making travelling possible, and commerce probable. And in the North—the birthplace at once of the railway, the locomotive, and their great introducers—the results of that revolution are seen as greatly as in the South. In Britain, then, there should be on the anniversary of a memorable day have been remembrance of the two men, George Stephenson, in his honoured grave, and Edward Pease, in his quiet resting place in the Quakers' burial place at Darlington, whose skill and enterprise carried to a successful issue an undertaking which was hazardous then, but which has proved itself the parent of uncounted blessings. They were the pioneers of a system which has set time at defiance, and made distance of little moment. On rapid communication all the appliances of our civilisation depend, and having it we may well turn in grateful thought to the Killingworth enginewright and the Darlington manufacturer, who needed an energy we can scarcely now credit, besides skill and enterprise, to slowly bring into being, 49 years ago, the first passenger railway.

#### THE LYME REGIS RAILWAY.

The first sod of this line was cut with much ceremony, on Tuesday, by the mayoress—Mrs. Skinner—and the feeling was very generally expressed that the enterprise would prove alike advantageous to the district and to those engaged in the construction of the line. Mr. Ward Jackson, in presenting the spade and barrow to Mrs. Skinner, expressed, on behalf of himself and colleagues, the fullest confidence in her ability and efficiency, remarking that as she had kindly undertaken the arduous duty, he had no doubt she was anxious to commence her work and earn her wages. Mrs. Skinner having dug the sod, turned it into the barrow, wheeled it along the plank, and dumped it over. The commencement of the work was announced by the firing of cannon and ringing of the church bells, Mr. Jackson and the Mayor—Dr. Skinner—digging and wheeling a spit each in the meantime. From the outline of the railway furnished by Mr. MacNay, the engineer, it appears that the line will start from the London and South-Western Railway Station at Axminster, run through Hartgrove Farm, skirt the parish of Combeypne, and on to Shawpiner Farm. It will then pass through Uplyme and the vale to Lyme Regis. It is intended that it shall be a single line, with provision by land and over bridges for a double set of rails. The length will be about 7½ miles, a tunnel thus being avoided. All former schemes have contemplated the construction of a tunnel, which in itself would absorb the whole of the capital required for efficiently carrying out the present project. The capital of the company is £5,000,000, with borrowing powers amounting to 26,000*v.*, which is considered ample sufficient for completing the line. It is also in contemplation to extend the system to Bridport and to improve the harbour at Lyme Regis.

In proposing the "Health of the Mayor and Corporation of Lyme Regis," he remarked that the district had been isolated for many years want of a railway, which would cause the town to rise in importance. Lyme Regis was one of the oldest boroughs in the kingdom. It had been the resort of queens, kings, dukes, and other exalted personages. Why should not the town rise in importance, both commercially as a maritime port and as a watering place? There was nothing whatever to prevent it. It would be admitted by all that the town was capable of improvement. To achieve that a railway was needed. The strangers who were anxious to supply this need only wanted a little energy and perseverance on the part of the inhabitants and a little assistance. They were carrying on the railway entirely free from any offer, and without asking for a single subscription. He did not, however, hesitate to say that they were not doing so out of pure love to Lyme, or solely for the public benefit, but were considering their own pockets as well. They would think him insane, and fit for a lunatic asylum, if he made a statement to the contrary. He contended that he was entitled to have some recompence for the money he invested.—The Mayor, in acknowledging the toast, assured them that every member of the corporation was anxious for the prosperity of the town. The trade depended upon the way in which the town was approached. If more facilities were offered in the way of land and sea carriage the trade would be increased, and the corporate body and the whole town benefited. He had looked forward most hopefully to the time when Lyme would have a railway. The event of that day was the first step in the way of progress. The inhabitants were bound in honour to thank the gentlemen who had interested themselves in the matter, for whatever helped the trade of Lyme would benefit them individually. A railway would be an immense advantage to him, and he believed that it would be an advantage to all. It was his privilege to propose "Success to the Lyme Regis Railway, coupled with the health of Mr. Jackson." Mr. Jackson also interested himself for the good of the town, and he trusted that a new page in its history would be opened: 400 or 500 years ago Lyme was a prosperous place. Vessels were smaller than now, and the harbour was large enough for a great number. But increased size demanded increased accommodation, and he was delighted at the prospect of that accommodation being provided. He should like to see the harbour made so as to accommodate the largest vessels now constructed. The town had declined, but he hoped that they had got to the lowest round of the ladder, and that it would now improve. Nothing would give him greater pleasure than to see it rise in importance.

The terms in which Mr. Ralph Ward Jackson acknowledged the toast were particularly appropriate. He explained that the inhabitants were indebted to the energy and perseverance of Mr. Duncan for obtaining the Act of Parliament, to which he (the Chairman) willingly gave his help. They were indebted also to Mr. Duncan for bringing the scheme to its present state. No one could look at Lyme Regis—not even a stranger—without expressing surprise at its being isolated so long, with Bridport on the east and Exeter on the west. He could not imagine how it was that persons connected with large companies had not filled up the opening. Fortunately a small company had now been formed with plenty of money to carry out the work, under a contractor whom he (the Chairman) was bound to say could not be equalled in the country. He believed that within 12 months such progress would be made that they would be almost to fix the day of opening. There was a point with regard to the locality deserving the greatest possible attention—the harbour. They might make a railway and bring down hundreds of thousands of people to the sea. No one present, he was sure, could calculate the amount of traffic which would be brought from the interior to Lyme within 12 months of the opening. But there was no place along the entire coast capable of so much improvement as Lyme Harbour. It possessed, moreover, advantages unknown in other places. It would be necessary to take a comprehensive view of the question, for it frequently happened that a large object could be accomplished at the same expense as a small one. Powers would have to be asked for of the Legislature to enable them to do what they proposed. The money required was far more than the Corporation of Lyme could hope to obtain. If they could not get it he hoped that the Corporation would allow the promoters of the railway to do it for them. He could safely promise, as Mr. Gover had promised with regard to the railway, that if facilities were afforded for the raising of money within two years the inhabitants would be astonished at the position to which Lyme had attained. The promoters would very soon have to face Parliament with reference to the works connected with the harbour. That was not the place to talk of matters of business. But he hoped that before many weeks elapsed they would receive another visit from the promoters to consider the best means of obtaining the powers absolutely necessary to make the town what they wished it to be. The inhabitants would not be put to any expense, because the promoters had plenty of men and money behind them. All he asked of them was to render all the moral help they could, and give evidence, if necessary, in favour of the extension of the harbour. He hoped that within three months they would see on paper what the promoters intended doing, and that they would believe they were come down there to perform what they had undertaken. He expected that it would be a good investment, and every man, whether he came from the North or West, had a right to find out, in this free land, the best spot for placing his money. He believed that capitalists would willingly embark their capital in an undertaking of that kind, particularly when they knew that the construction of a line of railway had actually commenced. The whole proceedings were of a highly satisfactory character, and both the railway and harbour enterprises have every promise of success.

**BIRMINGHAM EXCHANGE.**—The meeting at the Birmingham Exchange on Thursday was very well attended, and numerous influential parties were present. The principals, however, of several of the leading houses were absent. Among those present we observed:—Col. Barrows, Mr. Fisher Smith, Mr. Thomas Davies, Mr. Stephen Thompson, Mr. E. P. Baldwin, Mr. George Addenbrooke; Mr. Samuel Millington, of Summer Hill; Mr. Solomon Woodall, of the Barrow Boiler Works; Mr. Samuel Woodall, of the Windmill End Works; Joseph F. Lloyd, Mr. William Addenbrooke, Mr. Millward, Mr. Henry Rose, Mr. Bolton (Lee and Bolton), Mr. David Kenrick; Mr. Keen, of the district; Mr. Page, Roway; Mr. E. T. Wright, of the Monmoor Works; Mr. Eberhard, of Regent's Grove; Mr. Danks, of the Wellington Iron Company; Mr. Charles Sturge; Mr. J. N. Brown, Cannon Chase; Mr. William North, Mr. Samuel Downing, Mr. Edwin Lewis, Mr. Thomas Lewis, Mr. E. T. Malins, Mr. H. T. Knight (Hayward, Tyler, and Co., London); Mr. J. Cartledge, the Mayor of Hanley, and numerous coalminers, mineowners, and engineers from the Black Country and other districts. The market was firm for all kinds of iron, sheet-iron, and hoops being in pressing demand; the makers, however, refused orders for pressing delivery for these kinds. Wire-rods have improved considerably; great activity prevails in this trade in Warrington and the Forest, and the leading house in Shropshire is full of orders. Nail-rods and nail-sheets were enquired for, and there were good buyers on the market, but this business was deferred by mutual consent until Quarter-day. In common bars and boiler-plates very little business was done, owing to the near approach of Quarter-day.

The death of Mr. Peter Harris, the oldest broker on the Exchange except Mr. Charles Ryland, was often referred to, with appropriate feelings of respect to his memory. This bereavement took place at Aberystwith, and was the result of heart disease. The event, however, which created the greatest sensation was the death of dear Mr. Sampson Lloyd, whose life and conduct in the Black Country endeared him to the trade more than, perhaps, any other man living. The son of an honoured old banker, and connected, as deceased for so many years had been, with one of the most extensive and prosperous concerns in the Black Country, chairman of the Waterworks Company, still chairman of a large iron company, a county magistrate for South Staffordshire and East Worcestershire, one of Nature's noblemen, churchwarden of his church, a friend to the widow and a father to the fatherless, kind to the poor, affable and amiable to all, loved by all, and now his death is deeply lamented by all. He rests in peace, and enjoys his great reward, for Sampson Lloyd, the son of Samuel Lloyd, the banker, was a Christian indeed. The deceased was brother to the late Samuel Lloyd, of Old Park, and first cousin to Mr. Sampson Lloyd, M.P., for Plymouth. The principal business topic of conversation on the Exchange was the price of iron at the coming quarter-day, owing to an unwarrantable statement made in a paper last Saturday. Some people thought price might be reduced at quarter-day. However, it was clearly proved on the Exchange that the parties w. o had the assurance to couple Lord Dudley's name with the statement had no authority to use it. From all we could gather

on the Exchange we believe prices will remain the same—(say) marked bars, 12*v.* per ton; the Earl of Dudley's, 12*v.* 12*s.* 6*d.* The tin-plate trade is better. The quarterly meeting of this branch of the trade will be held at the Queen's Hotel, next Quarter-day, in January, 1875.—London Iron Trade Exchange.

#### NORTH STAFFORDSHIRE INSTITUTE OF MECHANICAL AND MINING ENGINEERS.

The members of the association paid a visit on Monday to the engineering works at Hyde Junction, near Manchester, and the collieries and cotton mills in the immediate neighbourhood. The party, which numbered 120, left Longton by special train at 7:50, reaching Hyde Junction at a quarter to eleven, and were there joined by many of the leading manufacturers and iron merchants of the neighbourhood, including Mr. Cross, the member for Bolton. The members were received at the engineering works by the proprietor, Mr. Daniel Adamson, who, in the course of an address, said that no doubt the necessity for acquiring knowledge in their professional life was much greater than it was in the days of their fathers, when mining and general engineering was conducted on a much smaller scale, and this applied more especially to coal mining and mechanical engineering connected therewith. They now had deeper pits to sink, more water to pump from greater depths, or tub back under much greater pressure; and, further, a much more extensive and efficient ventilation was required to meet the wants of, and to protect the miners from harm where large and heavy outputs of coal were daily produced. To perform all these various and perplexing duties well required as much talent, acquired knowledge and perseverance, or more, than any staple industry that was carried on in this country. Such was required at this time, but as shallow pits became more and more exhausted, and still deeper pits were necessary to keep up our coal supply, more complete knowledge and careful management would be required to meet the ever increasing difficulties and contingencies which would naturally arise under such new and undeveloped conditions. However, the district that produced a Brendley, whose exertions and never failing energy gave to Lancashire and that county an inland water communication, he hoped would never fail to furnish men with the requisite talent and enterprise to carry successfully into operation every work that might be required to be executed by gentlemen in their profession.

Mr. Homer of Chatterley, the President of the Institute, in reply, said he quite endorsed Mr. Adamson's remarks as to the necessity of acquiring knowledge for the various professional difficulties in opening up our deep mines, erecting suitable winding and pumping machinery, and becoming conversant with the general details of engineering, as carried out in that and similar districts, hence their visit that day. He had no doubt that when they had seen all that was so fully set forth in the programme, a most important step would have been taken in that direction.

The party then proceeded to inspect the engineering works, which occupy an area of three acres, all under cover, and are fitted up with every modern improvement for the manufacturing of all kinds of engines, especially blast and Bessemer blowing engines and plant. In the boiler-making department exceptionally and well-adapted tools were seen at work, and boilers in every stage of construction. Amongst the specialties were tools for driving rivet holes, and a patent machine for forming the well-known Adamson's anti-collapse flange seam. The flanging of a boiler flue by this machine was an operation which was watched with great interest, the flange being turned by the machine in the short space of 25 seconds. Among other objects of interest in the works were a number of specimens of American coal and coke, and Lincolnshire and American ores. The coal looked to be only poor, but the coke was good, and the ores appeared to be very rich. Light refreshments having been provided, the party proceeded to the Victoria Pit and the Astley Deep Pit, the scene of the recent disastrous explosion. At the latter pit the party were under the guidance of the new manager, Mr. Benjamin Wilson, and many of them descended the shaft, which is 686 yards deep. At the bottom they were shown the place where the fall took place which liberated the gas by which the explosion was caused, also the underground winding apparatus, furnaces, and boilers. The shaft is 12 ft. wide, and the gear at the top is worked by a vertical winding-engine (condensing), 60-in. cylinder, 7-ft. stroke, and drum 24 ft. diameter. The large pumping-engine has a 71-in. cylinder, 7 ft. 6 in. stroke, and is worked by 10 double-flued Lancashire boilers. Leaving the collieries, the Newton Moor Cotton Spinning Mills were visited, but the only feature of special interest about these were the large quadruple-action engines at the Albert Mill. These are new engines, just designed by Mr. Adamson, and the steam which is supplied by three boilers, working at 110-lb. pressure, is passed through four cylinders. After passing through the first two it is conveyed through a superheater to the third, and then through a superheating pipe to the fourth, after which it is passed through a condenser back to the reservoir. The capabilities of these engines have not yet been properly tested, but it is expected that they will work up to 600 or 700-horse power at an hourly consumption of coal of 1½ lb. to each horse-power.

After the inspection of the mills the party returned to the engineering works, where a splendid dinner had been provided. Mr. Adamson presided, and the toast list, in addition to the usual loyal sentiments, included, "Success to the Institute of Mechanical and Mining Engineers of North Staffordshire," proposed by the Chairman, and responded to by Mr. Homer, and "The Coal, Iron, and Railway Interests," proposed by Mr. Joseph Leigh, and responded to by Mr. Hopkinson.

—Iron and Coal Trades Review.

#### NEW COAL FIELDS.

The latest series of commercial reports issued from the Foreign Office contains the following report by Consul Blunt on the coal mines of Dranista for the year 1873:—A party of English engineers having recently surveyed, on behalf of the Viceroy of Egypt, the coal field of Dranista, and excavated from it some 350 tons of coal, which they have sent to Wales for the purpose of satisfactorily testing its steam generating or other properties, I have obtained from them the following account of their survey:—The coal field of Dranista is situated about 50 miles to the south of the town of Salonica, and is enclosed by a range of mountains of crescent shape, commencing on the south at Mount Olympus, and terminating on the north at the Bay of Kitros, in the Gulf of Salonica. There is an aggregate thickness of about 8 ft. of coal, extending over a known area of about 2000 acres; but it is highly probable that the coal field is of much greater extent, and although not actually proved, the engineers are of opinion, judging from the surface formation, that there is a total area of 30 square miles in which the above thickness of coal would be found, and which in round numbers would contain 255,000,000 tons of coal. The coal is of the Tertiary formation, appears to be of good quality, and would be useful for steam purposes. It burns very well in the open air, giving good heat, with very little smoke; but the engineers were not prepared to give me a definite opinion as to the chemical properties and fitness of the coal for generating steam, they not having been provided with means of making proper experiments with it on the spot. They say that in outward appearance it most resembles Scotch coal, but differs from all English coal in its rapid deterioration upon exposure to the atmosphere. When exposed it breaks up and crumbles into dust in a very short time, but when stored under cover it preserves its quality very well. So far three seams have been proved, of which the following are sections:—Demolaca: soft fire-clay roof—top coal, 1 ft. 9 in.; soft haling dirt, 2 in.; bottom coal with shale bands, 1 ft. 6 in.; total thickness of good coal, 2 ft. 9 in.—Loptacaria: Coal, 8 in.; fire-clay, 2 ft. 10 in.; coal, 5 in.; coal with bands of black shale, 1 ft. 6 in.; fire-clay, 6 in.; coal, 1 ft. 4 in.; total thickness of good coal, 2 ft. 1 in.—Laca: Coal mixed with fire-clay, 10 in.; coal, 4 in.; black shale, 6 in.; coal, 3 in.; fire-clay, 7 in.; coal, 2 inches; black shale, 9 in.; coal with thin bands of fire-clay, 2 ft.; total thickness of good coal 2 ft. 3 in.

Should the experiments with the coal prove satisfactory as regards its quality and marketable value, active operations on an extensive scale will probably be commenced early this year. The engineers propose sinking two pits, each of 300 yards depth, and to construct a rail or tramroad of about 20 miles in

length from the mines to Kitros, the nearest and most eligible place for shipping on the coast. The sinking of the pits would not entail great expense, as the ground to be sunk through consists principally of alluvial and Tertiary deposits. And the railway also could be cheaply constructed, the country through which the line would traverse being very level. A jetty would have to be erected at Kitros, this harbour being very shallow, and exposed to northerly winds. I am indebted for most of the above information to Messrs. Gray and Bell, the engineers who surveyed the coal field. Dranista, the chief village in the vicinity of this coal field, is prettily situated at the foot of Mount Olympus, in the centre of a well-wooded and picturesque country; its climate is salubrious, and the industrious and quietly disposed. Catterina, the nearest town to Dranista (three hours distant) is the centre of a very active and extensive trade in timber, which gives profitable employment to the population of the district. It is governed by a sub-governor under the Pasha of Salonica, with which and with the chief towns in Thessaly and Macedonia it is in telegraphic communication. In a country like Turkey, where the consumption of coal goes on increasing, owing to the advance it is making in agriculture, industry, and population, and to the success of railway extensions and other undertakings, the coal mines of Dranista, if they are found sufficiently fertile and worth working, will be of very great consequence.

#### ECHOES FROM THE MINING MARKET.

The fortnightly account which has just been completed exhibited a marked increase of business as compared with the former one. Investments are daily increasing, and consequently prices rule firmly. No change has been observable in tin, but shares of tin mines are decidedly getting scarcer at present quotations, and the feeling is abroad that the next move in the standards will be an upward one. The good supplies from Australia are decreasing the American demand is steadily reviving. The copper market having been remarkably steady of late, copper shares, although not in what we should call good demand, are firm, and show signs of hardening. Lead shares generally are dull (although in one or two isolated instances advanced), and little is doing in them. Colliery shares are not quite so firm, although the business now being transacted still continues of great magnitude; iron shares also show symptoms of weakness.

With reference to the falling off of Australian supplies of tin, noted above, have lately been received that the returns of tin sent from the Queensland mines to the coast show a gradual diminution, the receipts at Warwick for the week ending July 10 not exceeding 65 tons. It is said that the bulk of recent transactions in tin ore at Sydney were private sales to local smelters, at about last month's quotations.

From January 1 to July 25 the tin cleared for export at Sydney was valued at 295,214*l.* Should the colonial produce fall off one-half, and home consumption continue brisk, we should undoubtedly soon have better prices. But will such a combination of circumstances occur?

The proceedings at the late meeting of West Chiverton would appear to foreshadow a change of management, and the removal of the office to London. We note that the reserves of lead in the mine were stated at the meeting to be worth between 12,000*l.* and 13,000*l.*, but the probable cost of realising did not transpire. Although Captains Nancarrow, Juleff, and Nichols "considered" that "the machinery was in good working order throughout," Captain James reported very unfavourably upon its present condition, and stated that 100 tons of coal per month could easily be saved if it was only put in good repair, the waste of steam owing to leakage being very great. These conflicting statements must have greatly puzzled the shareholders, and if Capt. James is found to be correct (and we must say that he appeared to command the confidence of the meeting) the position of the agents will be greatly shaken. At the same time, we are glad to notice that the meeting decided to make no change in haste, and in adjourning their deliberations for a month showed no wish to judge the present management too harshly. The latter will now have ample opportunity to meet the charges brought against them; and although on the face of things they appear to have conducted affairs with some laxity, shareholders must remember that even they themselves cannot be said to be free from blame, for the officials have for some time past been left without the stimulus of healthy supervision, and their system of management has also for a long time been suffered to pass unchallenged. The present position of West Chiverton is undoubtedly the result of having a mine locally managed, when the great body of adventurers are what is technically known in the county as "out-adventurers."

The shareholders of Dolcoath were agreeably surprised in the early part of the week by the receipt of a dividend of 10*l.* per share (214*l.*), together with a very encouraging report of the condition of their property. At the previous account the dividend was 10*l.* 6*d.* Considering the state of the tin market during the past quarter, many would not have been surprised to have seen more than this trifling reduction in the dividend, and that much could be paid speaks volumes for the richness and general prosperity of the old mine. There are but four tin mines pasting dividends at the present moment, and Dolcoath heads the little list.

Better reports are to hand respecting Providence Mines, and the shares have been enquired for—price, 3 to 4*l.* The meeting will be held on the 6th inst., when it is expected that no call will be made.

In Foreign Mines business has been fairly active, Flagstaff having received, perhaps, the greatest share of attention. The meeting has been postponed from the 5th to the 9th inst., which looks as if the negotiations are yet incomplete. The general expectation appears to be that some satisfactory solution will be arrived at, and on the strength of this a good many shares have been bought, whereby the market has become firmer. In the early part of the week the shares were flat at quotations. One of the Emma directors has issued a short statement to the shareholders, wherein he tells them that they "have been the victims of a gigantic deception" (pretty apparent to all for some time), and that "steps have been taken to establish this point and fix the responsibility upon the culpable parties." Meanwhile "steps have been taken also by the vendor, who has attached the mine, so there is every sign of a further deadlock in this unfortunate concern. The shares, as might be expected, are in a most depressed condition. Good news continues to come from Richmond Consolidated, and the stock shows further improvement. There is no doubt that the company possesses a wonderfully rich property. It is entitled to rank as one of the few prizes amongst all the wretched blanks of American gold mining.

JAMES H. CROFTS.

#### MINING NOTABILIA.

##### [EXTRACTS FROM OUR MINING CORRESPONDENCE.]

**SOUTH CARADON.**—A 2*l.* dividend at least is expected at the meeting next week. The mine is looking well.

**WHEAL MARY ANN (Menheniot).**—All operations were entirely suspended on Saturday last, and the materials are now being drawn to surface, which will be sold by auction shortly. If a sett could be obtained of the adjoining ground there would undoubtedly be a splendid mine. The present company have in vain applied for the sett.

**SOUTH WHEAL CROFTY.**—There has been a steady and gradual improvement in the lode at the engine-shaft, and it is now a good lode, worth 25*l.* per fathom. They will proceed to drive to intersect the other lodes which, when arrived at, will probably enhance the value of the mine considerably. There is no discovery of a lode as yet in the north cross-cut towards East Pool; but small branches of tin are still met with, denoting that there is a lode at no great distance, or that the lode from East Pool has split away into the small branches. This will have to be further proved.

**WHEAL NORTHWOOD (St. Neot).**—This mine will resume, it is anticipated, operations shortly. There is a splendid course of tin to be seen.

**WHEAL VINCENT (Altarnun).**—This mine, which was offered by auction a short time since, still remains unsold. It would with a fair outlay pay dividends, if the tin standard would improve.

**TEESDALE.**—The agent writes, after describing all other operations in progress, "Our prospects in No. 3 cross-vein are very good indeed; the old ground is yielding better than I expected, and there is lead ore in sight at other points, as good as we started with in the rise (the rise is worth 20*l.* per fathom), and a good deal of ground laid at various points, while further south it is stated on the most reliable living evidence that a rib of solid lead ore 10*f.* wide was left standing under water. Also north of the engine-shaft the 'old man' had his deepest, richest, and most extensive workings, which Holme's level will unwater in about 30 fms. driving; but as we are driving through a piece of ground 4 fms. high, and there have been

ground. The most remarkable feature in connection with the mine is the very low price of the shares, according to the papers, which should be twice or three times as much.

**CATHEDRAL.**—Shares in demand, at 17s. 6d. to 22s. 6d. Mine opening out well. Shaft worth 40 ft. per fathom; western end, 20 ft. per fathom; eastern end, 12 ft. per fathom for copper ore.

**SOUTH WARD.**—Some splendid stones of silver-lead ore are being brought up from the 60 south on north Hoe lode, and specimens can be seen at the office of the company. The prospects of this concern are conducive to the belief that a valuable property is in store for the adventurers, and that the Tamar district will ere long regain its old reputation as the most productive for silver-lead in the two countries. The old Tamar Mine returned nearly one million in dividends, and South Tamar 36,000/- to the lucky adventurers.

**HINGSTON DOWN CONSOLS.**—At a meeting of the board of directors on Wednesday last a call of 1s. per share was decided upon; this is the first demand that has been made upon the shareholders since the incorporation of the company under the Limited Liability Act in July, 1873, and is as much for the purpose of avoiding the necessity of discounting ore bills for the future, and placing the mine in a good and sound financial position, as to provide for the payment of current costs. An accident to the engine had prevented the usual sale of ore in August last, and consequently deprived the company of their usual remittances. The sale of ore in September was about 500 tons, and there is every reasonable belief that the returns will be kept up. The 110 west has been showing signs of improvement, and it is not improbable that a course of ore will be met with before long.

**CWM ELAN.**—An extraordinary meeting of shareholders was held at the London Tavern, on Wednesday (Mr. Charles Eley in the chair), for the purpose of confirming a resolution passed at the previous meeting to voluntarily wind up the undertaking under the Companies Acts, 1862 and 1867. At the hour appointed there were not sufficient members to form a quorum, and the Chairman declared the meeting adjourned for a week, at the same time expressing a hope that there would then be the requisite attendance of shareholders, as otherwise a compulsory winding-up would have to take place, entailing considerable losses.

**WHEAL OWLES.**—At a meeting of adventurers, held at the mine, on Sept. 25, the accounts showed a debit balance of 11,276/- 19s. 5d. It was resolved that the disposal of the tin be left to the discretion of the purser, as before. Work performed during the quarter:—122 fms. 0 ft. 9 in. driven in levels, and 29 fms. 3 ft. 11 in. sunk in shafts and winzes; 26 paces stowing for tin on tutwork; 17 pitches working on tribute; and nearly 200 tons of tin unsold.

**CORNISH MINE SHARE MARKET.**—The Share Market continues inactive, with very little alteration in prices. There appears to be a steady demand for the principal shares at low rates, but there is certainly no disposition to sell unless at higher prices. The Banco sale, on Tuesday, is considered to have gone off satisfactorily, being about equal to 98/- delivered in London. At Dolcoath meeting, on Monday, a dividend of 10s. per share was declared; the accounts showed a profit 217/- on the three months' working, and a balance of 200/- was carried on to the credit of the mine; the report is a very good one, no signs of any falling off being apparent, but rather the deeper it goes the better it is. At Wheal Basset meeting, on Tuesday, a profit of 10/- was shown; this mine is singular in never having made a call; the report is a favourable one. The improvement in South Crofty in the engine-shaft promises well, and is now said to be worth about 25/- per fathom; it is an important point. The following are the closing prices:—Carn Brea, 5s. 6d.; Cook's Kitchen keep steady at 9s. 10d.; Dolcoath shares have been moderately dealt in at from 4s. 6d. to 4s. 10d.; East Pool quiet, called 10 to 10; East Lovell, in absence of business, called 10 to 11; mine said to be looking remarkably well. There is a better enquiry for Providence shares, which have advanced to 4s. 4d.; Rosewall Hill, 5s. to 7s. 6d.; there will be no call made at the coming meeting. South Carn Brea quiet, 1s. 6d. to 2s.; South Crofty are a little more dealt in, 10 to 11. A fair business has been done in Tincroft at 30 to 30s.; West Basset steady, 8s. to 8s. 6d.; West Frances, 9s. 6d. to 10s.; rather more enquired for. West Seton, 20 to 22s.; West Tolgus, a few shares changed hands, 7s. 11 to 7s. 12; Kitty (St. Agnes), 5s. to 6s.; Uny, 1s. 6d. to 1s. 10d.; Wheal Jane, 2 to 2s. —West Briton.

## Registration of New Companies.

The following joint-stock companies have been duly registered:—

**NUNNERY COLLIERY COMPANY (Limited).**—Capital 60,000/-, in 100 shares. To acquire a colliery in the West Riding of Yorkshire, the property of the Duke of Norfolk. The subscribers (who take one share each) are—H. Unwin, Broom Cross, Sheffield; F. Bardwell, Sheffield; H. Unwin, Sheffield; H. Pawson, Sheffield; W. Fisher, Norton Grange; J. Colver, Sheffield; E. Bevbridge, Sheffield.

**DANUBE DISTILLERY COMPANY (Limited).**—Capital 50,000/-, in 200 shares. For the purchase of a distillery in Turkey. The subscribers are—E. Hale, Croydon, 20; J. Garford, 116, Fenchurch-street, 20; W. G. Jackson, Dockhead, 20; J. Draper, 22, Great Winchester-street, 20; J. Hendry, Clarence-street, Caledonian-row, 1; S. M. Quennell, Corn Exchange Chambers, 5; and W. Moore, Chiswick, 1.

**FANSHAWE'S PATENT IMPROVED LEATHER COMPANY.**—Capital £3,000/-, in 100 shares. To deal in leather, cotton, flax, hemp, &c. The subscribers are—O. Palmer, Religate, 50; A. H. Mowbray, Religate, 2; G. F. Hawkin, Stock Exchange, 50; E. Rutter, Cambridge Park, Lewisham, 50; A. W. Naylor, Old Palace-yard, 50; H. Lockwood, Raleigh Club, 10; R. G. Goolden, East India Avenue, 50.

**GAS APPARATUS, GAS, AND CHEMICAL COMPANY (Limited).**—Capital 10,000/-, in 500 shares. To carry out patented improvements in connection with gas apparatus. The subscribers (who take one share each) are—J. J. Wood, Leighton Buzzard; W. Darby, Aylesbury; J. C. Garner, Aylesbury; J. Fraser, Aylesbury; R. Dickins, Aylesbury; J. Read, Aylesbury; J. W. Reader, Aylesbury.

**GRAT ELWY RIVER LEAD MINES (Limited).**—Capital 30,000/-, in 1,100 shares. To acquire mines under Bronhawton Farm, in the county of Denbighshire. The subscribers are—W. F. Nathall, Mansion House Chambers, 1; W. M. Y. Maxwell, Baker-street, 500; H. Brooke, Llanddilo, 500; H. Paddison, 57, Lincoln Inn Fields, 500; J. W. P. Firth, Dr. Johnson's court, Temple, 500; E. Bloomfield, Exmouth, 500.

**HENDREORGAN COLLIERY COMPANY (Limited).**—Capital 40,000/-, in 100 shares. To acquire a colliery in South Wales. The subscribers (who take one share each) are—W. Green, Montpelier square, Brompton; J. V. Younge, 25, Bucklersbury; Alfred Staley, Essex-road, Islington; G. M. Simmonds, Belvedere Villa, Upper Norwood; Alfred Kelby, 1, Great Winchester-street; A. C. Jecks, Lansdowne-road, Upper Holloway; E. G. Fisher, Attwells-street, Peckham.

LEAD ORES.			
Date.	Mines.	Tons.	Price per ton.
Sept. 25—Minera	60	£13 15 0	St. Helen's Lead Co.
ditto	29	13 12 0	Mill Dam Mining Co.
ditto	41	13 15 0	ditto
ditto	34	13 14 6	Adam Eytun.
ditto	9	13 13 0	Panther Lead Company.
26—Willoughby	12	13 12 6	Jenkins Brothers.
23—Lisburne—Glogfawr	50	14 17 6	Adam Eytun.
" Frongoch	40	13 3 0	Neill, Drue, and Co.
ditto	40	13 0 6	Panther Lead Company.
" Graigoch	15	12 10 0	Burry Port Smelting Co.

BLEND E.			
Date.	Mines.	Tons.	Price per ton.
Sept. 25—Minera	197	£ 4 2 6	Kenrick and Son.
ditto	75	3 5 0	ditto
ditto	91	3 3 0	Richardson and Co.
ditto	31 1/2	2 15 0	Bagill and Co.
ditto	31 1/2	2 15 0	Kenrick and Son.
ditto	27 1/2	2 15 0	Bagill and Co.
20—Talgarth	27 1/2	2 15 0	Kenrick and Son.
	130	2 14 6	Bagill Smelting Co.

## COPPER ORES.

Sampled Sept. 16, and sold at Tabb's Hotel, Redruth, Oct. 1.

Mines.	Tons.	Price.	Mines.	Tons.	Price.
Crewe and Abraham	63	£2 14 0	West Seton	43	£5 10 0
ditto	62	4 1 6	ditto	38	5 2 6
ditto	55	6 11 6	ditto	31	5 1 0
ditto	48	3 0 0	ditto	25	5 2 6
ditto	44	3 0 0	East Basset	65	3 6 6
ditto	41	5 4 6	ditto	60	3 17 6
ditto	36	3 4 0	South Crofty	46	3 13 6
ditto	35	4 18 6	ditto	38	2 2 6
ditto	34	6 14 0	Wheat Basset	46	4 4 6
West Tolgus	32	4 15 6	ditto	23	8 17 0
ditto	66	6 16 6	East Pool	33	3 4 6
ditto	65	6 2 6	ditto	27	2 19 0
ditto	61	9 4 6	St. Aubyn United	39	4 17 0
ditto	54	6 0 6	ditto	23	8 7 0
ditto	53	6 3 6	South Dolcoath	24	7 4 0
ditto	43	4 14 0	ditto	20	4 7 0
Cam Brea	32	3 1 0	Wheat Seton	38	3 12 6
ditto	57	4 5 0	South Carn Brea	33	4 3
ditto	53	4 4 6	South Frances	13	5 5 0
ditto	44	13 0 6	Wheat Buller	7	2 16 6
ditto	35	4 15 0	Pedin-an-drea	6	4 5 2
ditto	34	11 3 6	South Tolcarne	5	13 0 0
20—Talgarth	23	1 9 0	New Dolcoath	5	23 12 6

TOTAL PRODUCE.					
	£1942 15 6	South Dolcoath	44	£259 16 0	
West Tolgus	2865 13 6	Wheat Seton	39	137 15 0	
Cam Brea	1713 16 6	South Carn Brea	33	137 15 6	
West Seton	140	South Frances	13	68 5 0	
Bant Basset	125	731 6 0			
South Crofty	84	448 12 6	Wheat Buller	7	19 15 6
Wheat Basset	69	249 16 0	Pedin-an-drea	6	45 2
Bant Pool	60	397 18 0	South Tolcarne	5	13 0 0
St. Aubyn United	60	189 1 6	New Dolcoath	5	23 12 6
	389 0 0				
Average standard	£105 3 0	Average produce	75 3		
Average price per ton	25 3 0				
Quantity of ore	1760	Quantity of fine copper 131 ton	wts.		
Amount of money	£9036 2 0				

Evening Standard £105 3 0 | Average produce 75 3  
Average price per ton 25 3 0 | Quantity of fine copper 131 ton wts.  
Amount of money £9036 2 0

## FOREIGN MINES.

**DON PEDRO.**—Letter from the mine captains, dated Aug. 22: The mineral obtained this week has been derived from the Canoa and Nos. 6 and 8 shoots. The boxwork has been taken from No. 8, below the 25. Operations generally throughout the mine have progressed favourably, and the sinking continued most satisfactorily. The water being drawn from the mine amounts only to 18 cubic feet per month. Stopes: No change has taken place to notice in any of these works. In our explorations nothing fresh has been met with.

—Produce reduced from Sept. 1, 500 oitavas; estimate for August, 6500 oitavas. Letter from mine captain, dated Aug. 31, 1874:—The mineral this month is of a fair standard, and derived from the Canoa and Nos. 6 and 8 shoots, principally from the two last named. The boxwork has been obtained from the No. 8, below the 25. Sinking has again been slow in consequence of so much sand, as previously reported; but the incline is now down to the required depth to start another cross-cut, and as soon as we drain the sand boil and are able to square and timber the bottom of the incline, and fix the bob to Alice's, which is ready, we shall commence to drive. Operations have progressed favourably in other sections. Stopes: Canoa: Only little has been done here more than working the bottom of the stopes. No. 8 shoot has been wrought on above the 25, and No. 8 stopped as usual without change in the quality of the ore. In our explorations nothing new has been discovered.

**RICHMOND CONSOLIDATED.**—Telegram: "Six days' run, £43,000. Richmond are only."

**ALMADA AND TIRITO.**—Telegram from Mr. Clemes: "August profit for month, £6537=1307. 8s. sterling. Prospects better." Profit for month, after deducting London expenses, 1181. 8s. The profit for June was small, owing to the scarcity of water; but £2005 were written off the machinery account from that month. July profit, £420, less London expenses, 720.

**RIO TINTO.**—Sept. 22: Good progress reported with railway and pier, on which together 3963 hands were employed. Communication by rail between San Juan, the terminus of the Berlitzon Railway and the port of Huvela, expected very shortly. Removal of overburden about 2500 cubic metres per week; that there would then be the requisite attendance of shareholders, as otherwise a compulsory winding-up would have to take place, entailing considerable losses.

**BIRDSEYE CREEK (Gold).**—G. S. Powers, Sept. 8: I have to-day

sent to the Mint 280 ozs. of gold, the result from Neece and West claim for the month of August.

It looks now as though we might get the breasted ground worked off the solid bank by the end of the present month, after which I hope to make a much better showing. We have constantly been buying 250 inches of water since June 21: I shall now take

## Mining Correspondence.

## BRITISH MINES.

**ABERDAUNANT.**—S. Toy, Oct. 1: No. 2 adit driving east, I am pleased to say, has improved since my last report, and is now producing saving work for dressing. No. 4 stop over this level is worth 13*s*. per cubic fathom for lead. In the east part of the adit we have found the quartz lode to the east of the cross joint, and opened on it 10 fms. You shall know more particulars about this part next week.

**ABERYSTWITH.**—John Trevethan, Sept. 26: The lode at the 56 west is now 5 ft. wide, and become quite settled. I do hope, therefore, to report shortly a further improvement here. The 86 east is in a fine lode 8 ft. wide, spotted with lead ore throughout, and saving work for dressing. I shall soon have something still more cheering to write you in the course of a few fathoms further driving this end. The tribute pitch under the 36 looks well as we deepen, and the men are getting wages (i.e., 28*s*. per week) at the present price 5*s*. per ton. Every point is being pushed on and attended to as much as can possibly be done, and matters are in perfect keeping. Our reservoirs are filled to the brim with water, and the machinery in first-class condition.

**AMNODD AND NANTDDU.**—J. Kemp, Oct. 1: This mine is again in full work; the delay with the machinery has impeded our progress a little, but our engine is now working beautifully, the shaft cased and divided, with ladder road complete, and the shaft in full sinking by eight men, in a nice congenial stratum for the producing of lead; in fact, the ground is impregnated with lead throughout, which I think looks well for the intersection. No time shall be lost in getting the shaft down to the lode. I have put a new rope on the whim, the old one having become too dangerous to sink with, and the fact of our having a whim to sink with will assist us very materially in sinking.

**BAMPFYLDE.**—S. Mitchell, H. T. Hale, Sept. 20: I have been all under ground, thoroughly investigating and arranging the future operations for the ensuing month; suffice it to say that I am pleased with the appearance of the several points we are working, and, in fact, as a whole, I never saw the mine looking better throughout all our operations. We have six stope in the back of the 102, besides which we have set an additional stope to-day, where the lode is looking splendid. The two stope working in the 90 fm. level are yielding ore also in paying quantities. In addition to these, we have two other stope all but ready for setting at the 90, which we hope to do in the course of this week; that will make 10 stope being operated upon, independent of those at the 112. You will see by this that a large quantity of rich ore ground is being opened upon, and from general indications I can safely say that there is more ore ground opened and discovered than can possibly be taken away for the next three years to come. Our machinery seems to master the water, and we purpose rising in the back of the 90, about 2 fms. behind the end, where the lode looks very encouraging, and is in whole ground to surface. We have also good ore in the 70, and we have intersected a large lode in the 40 cross-cut; we have driven through it 4 ft., and the south wall is not yet discovered. Good as it is, I am satisfied it is not the Peacock lode referred to in my last report. Important to relate that nearly all the miners now employed in the copper mine are working on rich copper ore. We have now ready for transit to the market Nos. 1, 2, and 3 parcels of copper ore, making together nearly 100 tons, and another parcel of very high price.

**IRON MINE.**—The several iron lodes are yielding about their usual quantity of ore, especially at Stowford; there is no falling off in the quantity from our last report. At No. 2 shaft we are driving a level west, and are carrying it 5 ft. wide, through only a part of the lode, which is much wider. Our object is to get on to No. 1 shaft as quickly as possible, in order to have an outlet for the water at the deepest point from our No. 4 shaft east, where we are sinking upon the lode on the junction where the several branches are. Our development goes on becoming larger and concentrating to one great body, and all yielding rich iron ore; driving west on the lode in Stowford it is 2*s*. ft. wide, splendid iron.

**BEDFORD CONSOLS.**—G. Rowe, J. Mitchell, Sept. 30: In the 67, east of sump-shaft, the south part of lode for 4 ft. wide, continues to look exceedingly kindly, containing a good looking capel and spar, with mundic and spots of copper ore. The south part of the lode west of cross-cut has a strong masterly appearance; it is 6 ft. wide, composed of capel, spar, strong sulphur, and arsenical mundic, with good stones of copper ore—a kindly lode.

**BEDFORD UNITED.**—W. Phillips, Oct. 1: No change to notice has taken place in any part of the mine since last report.

**BOG.**—W. T. Harris, J. Barkell, Sept. 30: There is no particular change in the mine calling for remark. We are pushing on with all possible speed, and raising lead in fair quantities.

**BRONFLOYD.**—John Davis, Sept. 30: No 2 Shaft, Middle Lode: This is in the 52, east of Lloyd's cross-cut, continues very strong, and produces small ribs of lead ore, the ground in the cross-cut, north of the 40, and west of No. 3 shaft, is composed of ribs of carbonate of lime, spotted with lead ore, and there are indications of a lode in advance of the cross-cut. The stope over the 56 at No. 3 shaft, and below the junction, are yielding better, and the produce is quite 32 ects. of lead ore per cubic fathom. I expect to get the new roller shells up to morrow, when we shall put the crusher to rights again and resume dressing, as we have a large quantity of ore-stuff accumulated on the upper floors. The masons will wall up the top of No. 2 shaft so soon as the Abertaw line is carted from the lode at Trelefach.

**BURROW AND BUTSON** (St. Agnes).—Henry von Uster, F.G.S., John Christopher, Jas. Mayne, Oct. 1: Fortunately Report: The lode in the 62 west is 2*s*. ft. wide, composed of quartz, capel, and a little peach, with spots of copper and a little blonde. In the bottom of the 40, west of engine shaft, we have a very pretty lode, 3 ft. wide, worth fully 3 tons of copper and blonde. In the 40, east of engine-shaft, the lode in the back of the level is 3 ft. wide, worth 2 tons of blonde per fathom. In the 30, west of Tonkin's, the lode in the back of the level is worth 6 cts. for lead and 3 tons for blonde—a splendid lode, 6 ft. wide. In the 30, east of Tonkin's shaft, on the north or lead lode, the lode is 2*s*. ft. wide, composed of peach, mundic, and a little lead, but not to value at present, as we are not far enough east to be under the course of lead, on which we are sinking the winze from the 20. In the 20, east of Tonkin's shaft, in the winze sinking to the 30, the lode is worth 1*s*. ton of lead and 2 tons of blonde—a very fine lode, going down all in unbroken ground. In the 20, west of Tonkin's, the lode is 6 ft. wide, and worth about 2 ects. for lead and 3 tons of blonde per fathom. Our new dressing machinery will certainly save us three-fourths of the dressing cost hitherto paid; but like all new engines and machines, has to be worked some time before we can do regularly.

**CARGLYNNON.**—T. Hodge, Sept. 29: In the 70 east end w. are making good progress, carrying about 3 ft. of the rock for speed on the south side; the main part of the lode is standing north, the value of it is unknown. We are passing through a beautiful channel of ground—there is nothing like it in the upper levels. I feel sure that deeper working will yield favourable results. The stope in back of the 70 east are declining as they go up. In the 50 cross-cut north we are still meeting with small branches containing ore. We sampled to-day 10 tons of lead ore, for sale on the 8th proximo.

**CARROLL.**—J. Grose, R. Tyzzer, Sept. 30: We have great pleasure in stating that we put the engine to work on Thursday last, and it is performing admirably, quite to our satisfaction. At Doctor's engine-shaft the lode is 3 ft. wide, of a very promising character, letting out water pretty freely, and producing good stones of lead ore, and is being sunk by twelve men with all possible speed, and we hope to complete the sink to the 12 by Nov. 21. In the adit level west from Doctor's shaft the lode tapers its size, about 3 ft. wide, but as it is extended some distance from the shaft the air is bad, and we are under the necessity of reducing hands for the present.

**CENTRAL VAN.**—Captain J. Trevethan, Oct. 1: In sinking the engine-shaft during the last 10 fms. we have gone through a change of ground, which has the appearance of a disordered lode; it contains soft killas and spar, with spots of lead ore and sulphur. Whether it is the Van lode or not it is impossible to say; if so, it is thrown south of shaft very rapidly, through the agency of a north and south lode. To ascertain this we have driven north 7 fms., but as yet met with no lode. We have also driven 4 ft. south, to see if the lode has gone off in that direction. We shall continue at this point 4 fms., when if the lode, or even part of it, is not seen, we shall be satisfied that the lode is still to the north. I send diagram annexed, that you may be better able to see my views. We have four men on each of these ends. The deep adit level is being pushed forward as fast as possible, and although there is no change to report, we may expect the cutting into a good lode at any day.

**COURT GRANGE.**—E. Dunkin, Sept. 30: In the eastern part of the mine New Broglin shaft is being sunk vigorously in a large kindly lode, producing a quantity of sulphurous mundic and occasional lumps of blonde. It is also abounding in small fissures, a characteristic held to be favourable in this district. At surface here we have erected the shaft-shears, pulley stands, &c., for driving, which in a few days will be done by the machine. The draining of the western part is at the rate of 3 ft. in 24 hours. We are now in sight of the top of the plunger-pole, so in all probability early in the ensuing week we shall have the plunger-lift in working order. The men in the 16 have finished securing and cleaning it, and will now strip down the lode standing in the south side for 3 fms. behind the eastern end preparatory to extending this dragee. The lode standing contains lead and blonde in small quantities. I am hopeful that by driving this we shall meet similar bunches of ore as former workers had in this and the adit levels, as the surrounding rock is of a very congenial nature. I am pleased to say the wheel for drawing in this end of the mine is completed. The carpenters are now erecting stand for the launders, and the whole works are in course of construction with all dispatch.

**CRENNER AND WHEAL ABRAHAM.**—W. Thomas, J. Hammill, Sept. 30: Sturt's Engine Shaft: In sinking the shaft below the 228 fm. level the ground appears more congenial for mineral, and not so spare for sinking: now down about 1 fm. 2 ft. below the 228 fm. level. In the 228 fm. level west the lode has a much better appearance; it is now 1*s*. ft. wide, composed of spar, mundic, and a little copper ore. In the 215 fm. level west the lode is 2 ft. wide, yielding copper ore to dress; this end is still rather hard for driving. In the winze sinking below the 215 fm. level the lode is 3 ft. wide, yielding 3 tons of copper ore per fathom.—Crenner Shaft: In the 140 end, west of Harvey's rise, and east of Crenner shaft, the lode is 1*s*. ft. wide, yielding good stones of tin, opening up tribute ground.—St. George's Shaft: In the winze sinking below the 190 fm. level, east of shaft, on the south lode, the lode is 2 ft. wide, and yields 2 tons of copper ore per fathom.—Woolf's Shaft: In sinking this shaft (about 5*s*. fm. below the level) below the 208 the lode is 5 ft. wide, yielding 4 tons of ore per fathom, still a good looking lode. In the 208 fm. level, driving west, we have intersected the cross-course, which has disordered the lode for the present.—Vivian's Shaft: In the 220 fm. level, driving east, the lode is 2*s*. ft. wide, yielding good stones of copper ore, and of a kindly appearance.—Pelly's engine shaft, which is now down about 6 fms. 2 ft. below the 245 fm. level, has no change in it to remark on. In the 245 fm. level, driving west, the lode is 1*s*. ft. wide, producing a little copper ore.—Blewitt's Shaft: In the 234 fm. end west the lode is 1 ft. wide, yielding good stones of tin. In the 220 fm. west of shaft, the lode is 6 ft. wide, producing 3 tons of copper ore per fathom; this end continues to let out a large stream of water. The remaining bargains are much as when last reported on. There are employed this week—On tutwork, 204 men and boys; on tribute, 76 men and boys; on surface, 60 men and boys; total, 340 men and boys.

**M. DWYFOR.**—J. Jewell, Oct. 1: Setting Report: The lode in No. 1 level 1*s*. fm. east of the south cross-cut is 3*s*. ft. wide, carrying a beautiful leader of lead ore; the copper-bearing part is getting wider; price for driving, 1*s*. per fathom; lode in No. 1 level driving east of north cross-cut is producing rich

rocks of copper ore, sulphur, &c.; price for driving, 1*s*. per fathom. The stope east and west of the little shaft sunk on the south lead lode will produce 1 ton of lead ore per fathom; price for stoking, 4*s*. 10*s*. per fathom respectively. The copper portion of the lode in each stope is still standing; we shall take it down against my next report. Operations are proceeding as rapidly as possible. The mine continues to offer a very encouraging appearance.

**CWM ELAN.**—W. Goldsworthy, Sept. 26: Fair progress is being made in the driving of the 20 this week by 16 number of hands engaged; the lode in the eastern end is 3 ft. wide, composed of capel, lime, spar, lead, and blonde ores, of the latter two named worth about 22 ects. per fathom. This end is now going into virgin ground on the lode not worked on in the levels above, which is a very good feature. The lode in the 20 west is 9 ft. wide, and will produce about 20 ects. of lead and blonde ores per fathom—a kindly lode. Water is issuing very freely in each end; this is also a favourable symptom. We shall commence carrying the parcel of lead ore to Rhafaelader station the early part of next week.

**DE BROKE.**—T. Hodge and Son, Sept. 29: At Watson's shaft we have secured the collar, and sinking is resumed by a full pare of men. In the 25, west of the junction, we have taken down the leader part of the lode for 5*s*. fms. in length, but the lode to day does not look quite so grey, worth 1*s*. 10*s*. per fathom; the lode about this point is of greater width, and the north part of it has not yet been proved, but when cut through you shall be advised of its value. The stope below the adit level continue to produce fair quantities of lead. All surface work is being pressed on. We are erecting sheds over the dressing floors, and we hope to complete the same before the winter sets in. We sampled to-day 12 tons of lead, for sale on the 8th proximo.

**DEER PARK.**—W. Goldsworthy, J. Bucknell, Sept. 26: In the shaft sinking below the adit the stratum is strongly charged with branches containing blonde, mundic, spotted with copper ore, with an increase of water; we regard the present indications as being most favourable for the production of mineral on intersecting the lode. The pitwork and machinery are in good condition, and work remarkably well.

**DENBIGHSHIRE CONSOLIDATED.**—J. Pryor, Oct. 1: In the 112 west we

are pushing on the driving of the 20 this week by 16 number of hands engaged; the lode in the back of the 60, under this stope, by six men, at 8*s*. per fathom; this stope, by 16 men, at 1*s*. per fathom; lode producing 5 ects. of lead ore per fathom. The 45' o' drive south of James's stope, by four men, at 4*s*. per fathom; lode producing 5 ects. of lead ore per fathom. The 45 cross-cut east, south of Orchard air shaft, by six men, at 4*s*. 10*s*. per fathom. We have intersected a branch in this cross-cut which produces 5 ects. of lead ore per fathom. We have sixteen working, by sixteen men, which are producing moderate quantities of lead. Our machinery and pitwork is in good working order.

**FURZE HILL.**—W. Dodge, Oct. 1: No. 1 North Lode: The value of the lode producing 8 ects. of lead ore per fathom. The rise in back of the 60, under this stope, by six men, at 8*s*. per fathom; we shall get this stope in regular working order by the end of this week, when the clearing eastward will again be resumed. We have opened another stope in back of the 54, east of cross-cut, where the lode is worth about 3*s*. per fathom; price for stoking, 20*s*.—Middle Lode: There is no change in the 40 or 54 west since last reported on. The stope in back of the 40 are worth about 3*s*. 10*s*. per fathom, whilst that in the back of the 54 is worth from 8*s*. to 9*s*. Our last parcel of tin weighed 3 tons 5 ects. 22 lbs. Our next parcel, which we are busily engaged in preparing for market will be

next more.

**GORSEDD AND CELYN LEVEL.**—W. Edwards, Oct. 1: I am not able to report the intersection of the Merlin lode; but from the present change in the air I believe we are very near, as the water is coming out strong from the foremen—Coetin Glynen: We are not yet in a position to work the sum ground properly as the communication from the shaft is not quite ready. In a day or two we shall put a set of men in the other sum, so as to allow a good stope of ground to be worked. I think in my next I shall be able to give you very satisfactory news.

**GREEN HURTH.**—Wm. Vipond, Sept. 19: The end south from incline to be glancing to take more of the character of the stope as we have more hold of the limestone in the east cheek; we have more width of vein, and better ore; it is yielding now 4 tons of ore per fathom, with every indication of improvement. The stope above this is still yielding well—perhaps 6 tons of ore per fathom at present. The stope on same vein (No. 1) south is yielding about the same going north on same vein, both below and above adit; we are clearing the sides, but a deal of this though pretty good, will go to crusher, and so will the work coming from No. 1 cross vein. Nothing to report from old vein. Rutter's level continues better for driving; we have just got through the hazel on one side of the vein we are rising in, in the low level; the vein at this point is looking more kindly than it did when we were altogether in hazel in the level, but we see no ore in it yet. We have delivered 145 bings of ore for present sale.

Sept. 26: The end south from incline, on No. 1 cross vein, is still very good, and the vein opening out to a quarter width every day. It is yielding 5 or 6 tons of ore per fathom. The stope above this is yielding about the same, and the stope south over adit is of about equal value. The two workings clearing off the side of vein, one above and one below adit, are producing little at present except timber work, which has accumulated very much lately. We have also a good deal more bowse in stock than usual, but as we have plenty of water we expect soon to have most of this dressed up. Rutter's level is a little harder this week for driving, and the rise in the low level is still very wet. We expected to have got clear of most of the water at the top of the hazel, but we still have it coming from above. We have delivered for last sale 220 bings 4 ects. of ore.

**GUNNISLAKE (Clitter).**—William Skewis, J. C. Seecomb, Oct. 1: The shaft men are now engaged in putting down skip-road, easing, and dividing the shaft. In the 164, east of engine-shaft, the lode is worth 8*s*. per fathom, and in this shaft west the lode is worth 7*s*. per fathom. There are two stope in the back of the 164 east, worth 20*s*. to 25*s*. per fathom. The lode in the 140 west is worth 10*s*. per fathom. In the rise in back of the 140 the lode is worth 20*s*. per fathom. The stope in the bottom of the 140 west is worth 7*s*. per fathom. The winze sinking in the bottom of the 128 is worth 9*s*. per fathom. In the 116 west the lode is worth 30*s*. per fathom. No other change to notice through the mine.

**HALKYN DEEP LEVEL.**—Sept. 29: Saturday last being our setting-day at the above mines we have set the following bargains for the month of October:—The deep level to drive south-west, on the deep level vein, by two men, at 8*s*. per yard; the lode at this point is about 12 in. wide, consisting of limestone, spar, and spotted with lead ore. There are two men repairing the deep level, about  $\frac{1}{2}$  mile east of the entrance, at 12*s*. per yard. A pitch below the 174 yard level, north-east of junction on deep level vein, to four men; the lode is 2 ft. wide, and the stope has not yet reached the main part of the lode; there is, therefore, no change to report. In the rise in the back of the 140 west the lode is from 2 to 3 ft. wide, and still produces saving work of copper ore. The lode in the three stope in the back of the 140 west is worth on an average 25*s*. per fathom. In the 120 west the lode is fully 3 ft. wide, consisting of peach, mundic, caple, quartz, prian, and still the portion of the lode carried—5 ft. wide—is worth 20*s*. per fathom, and still produces small quantities of black oxide and malleable copper. In the 110 west the portion of the lode carried—5 ft. wide—is worth 20*s*. per fathom, and still produces very promising. The lode in the back of the 110 west is still worth 1*s*. per fathom.

**ILLOGAN.**—R. Pryor and Son, Sept. 29: Within the past week we have made fair progress in driving the deep adit cross-cut north of engine-shaft; the ground is of a highly mineralised nature, and for the first time we have observed a little water flowing from the end.

**KINGSTON VALLEY.**—G. F. Richards, Oct. 1: The driving of the 18 west has been resumed this week, where the lode will yield 10 ects. of lead ore per fathom, and presents very promising appearances. The stope in back of the same (18) is still being carried upwards, in which the lode maintains its size, character, and value, yielding 1 ton of silver-lead ore per fathom. The descending operations are progressing satisfactorily, and we purpose continuing them for another fortnight. We shall also get about a good quantity of blonde for sale at the same time.

**LADY CONSTANCE.**—Oct. 1: I have set the cross-cut to four men, to drive west of the old shaft for this month, at 9*s*. per yard; the men to fill and land all the stuff, pay for winding, and all other costs. I think from the different indications that we shall have an improvement in the ground shortly.—Katie's Shaft: After driving some distance north and south of the level west of the cross-cut, and not finding anything better than in the western end, I have put the men to drive on west again, where we are getting a little one, and the men progressing well.

**LADY WELL.**—A. Waters, Oct. 1: Setting Report: Caunter: The engine-shaft to sink below the 16, by nine men, at 15*s*. per fathom; lode 4 feet wide, yielding good stones of lead, and improving. The 16, north of shaft, by four men, at 6*s*. per fathom; lode 4 ft. wide, worth 1*s*. per fathom. The 16 to go south of shaft, by two men, at 2*s*. per fathom; lode 5 ft. wide, yielding solid clinkers of ore. We expect a great improvement in this end soon. The adit to drive south on caunter lode, by four men, at 8*s*. per fathom; we expect to hole this end to the rise from the 16 in 6 ft. further driving, and we shall then have a rich pile of lead ground. Maia Lode: The 32 to drive north of the shaft, by six men, at 12*s*. per fathom; the lode is 4 ft. wide, composed of spar and lead ore of a very promising lode. The 16 to go north of shaft, by two men, at 8*s*. per fathom; lode 3 feet wide, and we are still in the greenstone. The engineers are fixing the machinery.

**MARKE VALLEY.**—J. Seecomb, J. Stentake, F. Rawles, Sept. 25: Setting Report: The 136, to drive west on Marke's lode, by four men



**WHEAL MARY HUTCHINGS.**—H. Miners, Sept. 30: [New South Lode] The lode in the drivage west of cross cut is not so large as what it has been, owing to a change in the ground, the killas being of a harder nature, but no doubt from its present appearance it will soon resume its former soft congenial character, and the lode will again prove as productive as ever; it is now about 1 ft. wide, producing splendid work for the stamps. The lode in the stopes in the back of this level is worth from 10*l.* to 12*l.* per fathom, and we have every reason to expect from its productiveness since it has been intersected that as we develop it will pay well for taking away.—Main Lode: This lode is still looking well, and the stuff broken therefrom is producing from 30 to 35 per cent. for arsenic, besides tin; the more I see of this lode the more I am convinced it will prove of great value in depth and open up a splendid remunerative mine. All the other points are still of a very promising character, and should things continue as they now are our next sale of tin will pay cost, and I hope the time is not far distant when we shall again resume paying dividends.

**WHEAL RUBY.**—Sept. 30: The appearance of the lode has further improved in the adit level driving west. A course of peach with a little iron has come in against the north wall, similar to that which led to the tin discovered some months past, and I am of opinion that the result will be the same here in driving a short distance further and toward the granite. I hope to be able to report a great improvement in a few days, as there is every reason to expect it.

**WHEAL RUSSELL.**—John Bray, Oct. 1: The lode in the 25 fm. level is 3 ft. wide, with stones of ore. The lode in the rise above the 25 is improved, worth 3 tons of ore, at 1*l.* per fathom. The lode in the rise above the 40 is also improved, worth 3 tons. The lode in the 40 is producing stones of ore, but not to value. The lode in the stopes throughout is looking very well. We sampled last Friday for one month 10*t.* tons.

**WHEAL UNY.**—W. Rich, M. Rogers, Sept. 26: The 150 end, west of engine-shaft, is unproductive; we shall shortly begin to rise in the back of this level, towards incline-shaft. The 150, east of Goodings, has a promising appearance, although poor at present. The 140, east of King's, is worth 10*l.* per fathom. The 140, west of incline-shaft, is worth 12*l.* per fathom. We have begun to drive the 130 end west, where the lode looks likely to yield tin. The rise in the back of the 130 end west, where the lode looks likely to yield tin. The 130 end, east of King's, is worth 10*l.* per fathom. The 120 is worth 10*l.* per fathom. The 120 east is worth 8*l.* per fathom. The 110 east is worth 8*l.* per fathom. The 40, west of incline, is improved, now worth 8*l.* per fathom. The ground is rather easier in Hind's engine-shaft. The engine has been repaired, and is now working satisfactorily.

**NORTH DELABOLE SLATE QUARRY.**—G. Rickard, Oct. 2: The progress of riddling section of quarry of overburden is going on favourably for the force employed; proportionate and effective work is being done to the point. We have recently had a very great rainfall, which has thrown large quantities of water into the quarry; the pumps, however, are keeping it under.

**WHITEHAVEN IRON MINES.**—T. Rosewarne, Sept. 30: I beg to hand you report of progress made during the past month, ending September 29.—Nab Gill Mine: The shaft on top of hill has been sunk 6 fms., to meet the rise in back of midway, by four men, at 6*l.* per fathom, and have also cleaned out the rise. The stope in back of midway drift has been worked by two men on day-work; the lode is very good. No. 1 drift has been driven 6 fms., 1*l.* 2*m.*, by two men, at 4*l.* and 1*l.* 1*m.* per fathom. The lode is a little improved. This drift is now well-nigh under the summit of the hill, and when this is reached I have no doubt we shall meet with a large body of ore. No. 1 stope in back is worked by three men and one boy, on day-work; the lode is fully 11*l.* wide, and will yield 60 tons of ore per fathom. No. 2 stope in back has been worked by two men 5 fms., 2*m.* 5*s.* at 2*l.* 1*m.* per fathom; this stope has been held to the drift above, and can be worked now at a faster and cheaper rate. No. 1 side vein has been driven on 5 fms., 5*s.* 8*m.*, by one man and one boy, at 3*l.* per fathom; the lode is still very good. Intermediate drift between No. 1 and No. 2 levels has been driven 4 fms., 2*m.* 7*s.*, by two men, at 2*l.* 1*m.* and 3*l.* 10*s.* per fathom. The lode is now split with a horse of granite out, will shortly wear out, and the lode become as productive as ever. No. 2: The rise in the back of this drift has been put up 4 fms., 2*m.* 5*s.* by four men, at 7*l.* per fathom, through a good lode or ore, yielding about 40 tons (to 12*f.* long, 6*f.* high, and 5*f.* wide) of the best quality ore. The side vein in this drift has been driven 7 fms., 3*m.* 7*s.*, by four men, at 1*l.* 1*m.* and 3*l.* per fathom. It is small at present, and strongly impregnated with ore, and to all appearance we shall meet with a good lode. No. 3 drift has been driven 4 fms., 5*m.* 5*s.* by four men, at 1*l.* per fathom. The lode is of a very promising character, and will soon be in under the ore in No. 1 and No. 2 drifts above. The side vein in this drift has been driven by two men, 2 fms., 1*m.* 7*s.*, at 9*l.* and 8*l.* per fathom. The lode is improving, and will now yield about 5 tons of ore per fathom. No. 4 drift has been driven 5 fms., 5*m.* 6*s.*, by six men, at 8*l.* per fathom. The lode has been split with granite, which is wearing out, and the lode will now yield 10 tons of ore per fathom. No. 5 drift has been driven, by six men, 3 fms., 10*s.* at 6*l.* 1*m.* and 6*l.* per fathom. I see no change in the lode worthy of notice since my last.—Blea Tarn: No. 2 drift has been driven, by four men, 8 fms., 5*m.* at 3*l.* 10*s.* per fathom. The lode has been greatly disturbed by a cross-course, and I have, therefore, brought the men back and put the men to drive on a part of the lode which is running in a north-westerly direction, and is opening out better than the part we have driven on.—Ban Garth: No. 2 drift has been driven, by four men, 9 fms., 1*m.* 2*s.*, at 3*l.* per fathom, through a very promising lode. We have every reason to believe that we shall shortly meet with a large body of ore by the present appearance of lode. There have been carted to Drigg Station during the past month 199 tons 8 cwt.s. of ore. We have had employed during the past month 56 men and boys.

**RAVENGLASS AND ESKDALE RAILWAY.**—Sept. 25: High level tip built up to level of underside of coping for remaining portion of the 95*f.* on left hand side. Bottom ballast laid, and rails lifted from 1 mile 50 chains to 1 mile 55 chains, and from 2 miles 13 chains to 2 miles 40 chains. Rails laid from 2 miles 45 chains to 2 miles 65 chains. Fencing continued. Bridge at 4 miles 74 chains road to "King of Prussia," both abutments walls up to level. Road formed from 7 miles 6 chains to 7 miles 8 chains. Men engaged on earthworks between 4 miles 71 and 72 chains, and between 7 miles and 7 miles 6 chains. The remainder of rails and sleepers will be on the ground within ten day or a fortnight, also the girders for Ravenglass Bridge, when the line may be at once laid up to the road to King of Prussia. The engine is expected to be at work on the line in a few days.

The letters of allotment in the North Prince Patrick Lead Mining Company (Limited) were sent on Tuesday.

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**D. ERNEST MELLISS, A.M., Ph.D.,**  
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52, BROADWAY, NEW YORK, UNITED STATES,

EXAMINES and REPORTS upon MINERAL and other LANDS, MINES, ORE BEDS, &c., either in or out of the United States.

Information furnished in regard to any of the American Mining Districts. Dr. MELLISS has had special experience in the Silver and Gold Mines west of the Rocky Mountains, and in the Coal and Iron Region of the Southern States.

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\* \* \* With this week's Journal a SUPPLEMENTAL SHEET is given, which contains—Original Correspondence: Cleator Mines and Furnaces; North Wales Quarries' Strike; Diamond Rock Boring (M. G. Morgans); Great Western Coal Consumers' Company; Sulphur in Iceland, and Mining in Italy; Coal Mining in Italy—the Sasso Forte Collieries Company; Nascent Copper Process; Teocasa Silver Mining Company; Emma Mine; Mining Enterprise (R. Tredinnick); Appointment of Purser at West Seton; Laxey Mines and their Management (J. Polglase); Emmens' United Mines.—"Shooting Fast" to Malta and the Coal Trade" (T. W. Bunning)—Australian Mines Reports—The Baxter Engine (Illustrated)—Foreign Mining and Metallurgy—Patent Matters, &c.—Meetings of the Antiquaria (Frontino), Central Swedish Iron and Steel, Willoughby, Garton Copper, Dolcoath, and Wheal Bassett Companies.

per bottle being the quotation, at which price a fair business concluded.

**TIN.**—The market for tin has been easy throughout the week, and still continues in a rather doubtful position. Lower prices having been accepted for arrival, the market is weak, and buyers are unwilling to operate to any great extent, notwithstanding that the deliveries for last month from stock in London were unusually large, amounting to 765 tons. Straits tin now rules at 9*l.* on the spot, and for arrival lower prices have been taken.

**TIN-PLATES.**—Common coke are offered at 27*s.*

**TIN.**—(Messrs. Ebeling and Havelaar, Rotterdam, Sept. 30).—With the exception of a few days of activity tin has been very quiet during the past month. However there has been no pressure to sell, and prices show but a slight decline at the close. The Dutch Trading Company's fifth sale in 1874, announced on Sept. 9, took place yesterday, when the 22,535 slabs Banca were sold at from 5*l.* fl. to 5*l.* 7*s.* fl., average 5*l.* 8*s.* fl. The next sale will probably be held towards the end of November. Transactions in Banca have been few, owing to the supply offering. The price gradually advanced from 5*l.* fl. to 5*l.* 8*s.* fl., from which there was a decline to 5*l.* fl. Contracts for delivery, ex September sale, changed hands from 5*l.* fl. to 5*l.* 7*s.* fl., the price since giving way to 5*l.* fl. Since there are sellers at 5*l.* fl., but no buyers. Billiton continues slow of sale. The following statement shows the position of Banca tin in Holland on Sept. 30, from the official returns published by the Dutch Trading Company:

	1874.	1873.	1872.	1871.
Import in September	Slabs 7,076	.....	28,136	.....
Total nine months	120,385	.....	170,623	.....
Deliveries in September	4,976	.....	7,800	.....
Total nine months	99,530	.....	95,319	.....
Stock second-hand	29,053	.....	44,351	.....
Unsold stock	127,402	.....	131,918	.....
Total stock	155,455	.....	176,289	.....
Afloat	.....	Pecula 2,200	.....	3,165
Statement of Billiton:				
Import in September	Slabs 17,300	.....	13,700	.....
Total nine months	70,456	.....	59,900	.....
Deliveries in September	11,425	.....	1,800	.....
Total nine months	63,345	.....	47,056	.....
Stock	32,331	.....	27,703	.....
Afloat	.....	Pecula 4,000	.....	4,125
Quotation <i>fl.</i> Banca	56 <i>l.</i> 1 <i>s.</i>	.....	75 <i>l.</i>	.....
Sept. 30 Billiton	54	.....	74	9 <i>s.</i>
These combined returns of Banca and Billiton for 1874, compared with those for 1873, exhibit—A decrease of the import for September of 546 tons; a decrease of the import for the nine months of 1241 tons; an increase of the deliveries for September of 213 tons; an increase of the deliveries for the nine months of 641 tons; a decrease of the stock second-hand of 365 tons; a decrease of the unsold stock of 14 tons; a decrease of the total stock of 506 tons; a decline of the quotation of Banca of 8 <i>l.</i> per ton. The Government Returns for the month of June are as follows:—				
EXPORT OF TIN FROM HOLLAND.				
	1874.	1873.	1872.	1871.
Germany	Tons 312	296	319	1727
England	74	118	9	217
Belgium	168	100	128	770
France	50	112	24	170
Hamburg	47	25	35	218
United States	—	—	16	—
Other countries	22	26	49	127
Total	673	677	562	3245
				3873
				2465

**COPPER.**—Messrs. Pitcairn-Campbell and Co. (Liverpool, Sept. 30).—Business transacted during the fortnight comprises 4000 tons bars at 7*l.* 10*s.* per ton; 60 tons ore here at 1*l.* 3*m.*; 1100 tons at 1*l.* 1*m.*, and 700 tons ore to arrive here at 1*l.* 6*s.*. Also 1118 tons regulus, to arrive at 1*l.* 6*s.*; 200 tons regulus, at Swansea, at 1*l.* 6*s.*; and 2198 tons to arrive there at 1*l.* 6*s.* per unit. At the Swansea sale, on the 22nd inst., 2296 tons ore, average produce 13*l.* per cent., reduced 1*l.* 11*s.* per unit. Arrivals here during the fortnight of West Coast, S.A., produce—Norseman, from Valparaiso, 50 tons bars; Rosote, from Valparaiso, 10 tons bars; Potosi, from Valparaiso, 80 tons bars. At Swansea—Nil. Stocks of copper (Chilian and Bolivian) in first and second hands, likely to be available, we estimate at 1*l.* per ton. Regulus—Bars. Ingots. Barilla. Liverpool ..... 662 ..... 11,100 ..... 20 ..... Swansea ..... 2900 ..... 5843 ..... 865 ..... 20 ..... Total ..... 2900 ..... 6511 ..... 11,965 ..... 20 ..... Representing about 15,500 tons of fine copper, against 17,100 tons on Sept. 15, 1874, 20,800 tons on Sept. 30, 1873; 21,000 tons on Sept. 30, 1872; and 17,400 tons on Sept. 30, 1871.

**Messrs. Vivian, Bond, and Watson (Liverpool, Sept. 30).**—The increase in values of almost all descriptions of copper during the past month amounts to about 4*l.* per ton; this has been brought about by an active demand and large purchases by large speculative purchasers. The sales of bars have been very large, the principal portion being speculative, and at the close the nearest values are 8*l.* per ton, and upwards for special and most favourite brands. In furnace material the smelters have taken all the available ores and regulus offering at fair prices both spot and to arrive; and speculators are also reported to have secured

the more so as this preliminary of the consumers must surely and effectually frustrate all hope of a fall. Yellow prussiate has been in better demand, and an advance of 1d. per pound has been noted. Nitrate of soda has likewise reached a higher figure for immediate delivery, an additional advance being asked for forward orders. Now that the upward movement has really begun a further advance is not at all unlikely, although we doubt whether the price will soon regain its old level. There has been more enquiry for benzole. The stocks laid in at late rates have considerably lessened the supply, and higher quotations have latterly been accorded to buyers. Bleaching powder continues steady, at late prices. Sulphate of ammonia has been in even shorter supply than before; the price, however, remains unchanged, as the demand has been but slight. Saltpetre has been quiet, and prices rather easier.—Minerals: The coal market has been fairly active. The week compares, however, unfavourably with the preceding one, owing, no doubt, to the sudden withdrawal of speculators. The reassuring aspect of the South Durham dispute has been taken for transmission to Paris, and the bars, 51,000l. in value, have been sent into the Bank. On Oct. 5 about 684,000l. may be expected from Australia and Japan. The coin, valued at 180,000l., will doubtless be exported to France, and the Bank will receive the bars, there being at present no demand for them.—SILVER: The market continues depressed, and the price at 57½d. per ounce exhibits no change. The arrivals during the week have been about 75,000l. from New York, and 35,000l. from the West Indies. The demand has been chiefly for Russia, but the Peninsular and Oriental steamer takes 5000l. to Bombay.

Messrs. Pixley and Abel—GOLD: The only arrivals during the week have been 86,800l. from the West Indies, and 24,000l. from China. The coin out of these shipments has been taken for transmission to Paris, and the bars, 51,000l. in value, have been sent into the Bank. On Oct. 5 about 684,000l. may be expected from Australia and Japan. The coin, valued at 180,000l., will doubtless be exported to France, and the Bank will receive the bars, there being at present no demand for them.—SILVER: The market continues depressed, and the price at 57½d. per ounce exhibits no change. The arrivals during the week have been about 75,000l. from New York, and 35,000l. from the West Indies. The demand has been chiefly for Russia, but the Peninsular and Oriental steamer takes 5000l. to Bombay.

The settlement of the fortnightly account took place in the MINING SHARE MARKET this week, and was comparatively of small amount. For tin shares there has been rather more enquiry this week, but very little business has been transacted, and for these, as well as for shares generally, our quotations are for the most part nominal.

The Banca sale went off very well, and the tin realised something like 95l. per ton, delivered in London—about equal to the previous sale in July. At the Copper Ticketing, on Thursday, the standard for copper ores advanced 3d. 12s. per ton.

Dolcoath, 46 to 48; at the meeting, on Monday, the accounts showed a profit of 2172l. on the quarter, and a dividend of 2148l., or 10 per cent., was declared, leaving 260l. in hand. The engine-shaft is now down 7½ fathoms under the 314, and the south part of the lode is worth 50l. per fathom for 12 ft. long. The entire lode is worth 150l. per fathom. Great Laxey, 11½ to 12; the accounts just issued to the shareholders preparatory to the meeting show a cash balance at the bankers of 10687. 4s. 5d.; ores on hand valued at 10,228l. 7s.; land at Laxey, &c., 5000l.: total assets, 11,978. 9s. 11d., against liabilities—to merchants, 3549. 13s. 4d.; royalty, 1932. 12s. 3d.; charges on ores, freights, &c., 961. 1s. 8d.; office expenses, 92. 1s.; directors' travelling expenses, 24. 14s. 10d.; leaving 5276. 0s. 10d., to which is added as an asset "Amount of ores estimated by agents to be contained in topings that are to be redressed"—lead, 220 tons at 19½, 4182l.; blonde, 2200 tons at 2½, 4400l., making estimated assets, 13,856. 0s. 10d. The general account of income and expenditure from July 6 to Aug. 7 shows—Lead sales, 21,571. 2s.; and blonde, 9467. 15s. 10d.; total, less credited last account, 23,612. 4s. 10d.; stock on hand, 10,228. 7s. The expenditure has been—Labour costs, 19,783. 1s. 7d.; merchants' bills, 5010. 15s. 11d.; royalty, 2986. 16s. 1d.; dividend paid in April, 4500l.; and other charges, making up an expenditure of 14,926. 14s. 9d. The report, which is a very long one, shows that 662 persons are employed at the mines—miners, &c., underground, 338; on the surface, 324. The deepest level is the 235 fm. level, which is poor. At Dumbell's, the 155 is a rich level, worth 100l. per fathom in a rise. Van, 22 to 24; the directors have declared a dividend for the quarter of 10s. per share—7500l. Van Consols, 2½ to 3; East Van, ½ to 1.

Wheal Jane, 2 to 2½; at the meeting the accounts showed a profit on three months' working of 434. 12s. 11d., and a balance of 685. 16s. 7d. was carried to the credit of next account. This was taking credit for tin in stock, 53 tons—2780l. The agent's report states that he is opening out more tin ground than he is taking away, and all that is wanted is a better price for tin. At Wheal Owles meeting the costs were 3150l. for the quarter, and the debit balance nearly 12,000l., against which there is in stock 200 tons of tin. Wheal Bassett, 20 to 22; at the meeting, on Tuesday, the accounts showed a profit of 1017. on three months' working, and a debit balance of 4635l., but no call was made. The copper ores sold realised 532l.; tin, 64½ tons, 3532l. The report states that in the tribute department there are pitches working on copper from 4s. to 15s. in 12s., and on tin from 9s. to 13s. 4d. in 11. South Crofty, 10 to 11; the lode in Price's shaft still improves, and is reported worth 25l. per fathom. Wheal Grenville, 4½ to 4¾; the cross-cut in the 110 north is being pushed forward with all possible dispatch. The stop above the 150, on South Condurrow lode, is worth 15l. per fm. Various points in operation are worth 113½ per fathom in the aggregate. New Rosewarne, 4 to 5½; the 58 west continues worth 12½ per fathom for copper. Bog, 5s. to 10s.; Carn Brea, 55 to 57½; Cook's Kitchen, 10 to 11; East Bassett, 3 to 4; East Caradon, 1 to 1½; East Lovell, 11 to 12; East Pool, 8½ to 9.

East Darren paid a dividend of 11. per share on Wednesday, making 224. 10s. paid on each 32½ share; Devon Great Consols, 17s. 6d. to 22s. 6d. At Wheal Emma, the 145 east, 130 east, and the 115 east, on Northway's lode, are looking well, being worth 40l. and 60l. per fathom for copper ore, with every prospect of a continuance. Hington Down, 1 to 1½; Ladywell, 2½ to 3; Marks Valley, 20s. to 22s. 6d.; Parys Mountain, 7s. to 9s.; Pennerley, 1½ to 1½; Penstruthal, 10s. to 12s. 6d.; Providence Mines, 4 to 5; Roman Gravels, 14 to 14½; South Carn Brea, 1½ to 2½; South Caradon, 95 to 100; South Condurrow, 3 to 3½; South Frances, 10 to 12; South Roman Gravels, 12s. 6d. to 17s. 6d.; South Tolcarne, 5s. to 10s.; Tincroft, 30 to 31; West Bassett, 8½ to 9½; West Chiverton, 12 to 2½; West Esgair Lie, 2 to 2½; West Frances, 9½ to 10½; West Seton, 20 to 22½; West Tolgas, 70 to 72½; Wheal Crebor, 20s. to 22s. 6d.; Wheal Kitty (St. Agnes), 5½ to 6½; Wheal Peevor, 2 to 2½; Wheal Uny, 1½ to 1½; Tankerville, 7½ to 7½; the report states that the lode in the 152, 140, and 92 fm. levels, west of Watson's shaft, are worth 5 tons of lead ore per fm. each; the winze below the 130 west 5 tons. The next sampling will be 100 tons of lead ore for the month.

Almada and Trito, ½ to ¾; Birdseye Creek, 2½ to 2½; Cedar Creek, 2½ to 3½; Chontales, ½ to ¾; Don Pedro North del Rey, ½ to ¾ dis.; Eberhardt and Aurora, 5 to 5½; Emma, 1½ to 1½; Flagstaff, 2½ to 3½; Frontino and Bolivia, 5s. to 7s.; Last Chance, ½ to ¾; Malpaso, ½ to ¾; New Quebrada, 3½ to 3½; Richmond Consolidated, 6½ to 6½; St. John del Rey, 240 to 250; South Aurora, ½ to ¾; Sweetland Creek, 2½ to 2½.

The Market for Mine Shares on the Stock Exchange during the week has continued to manifest an improving tendency, and the fortnightly settlement, which was satisfactorily concluded on Wednesday, showed that the extent of business transacted during the period embraced in the accounts had been upon a much larger scale than for many months past. The strengthening condition of the metal market induces investment purchases, especially at the low level of prices which now obtains for nearly all classes of home descriptions.

American mines have been fairly supported, and in some instances a sensible advance has been established. In the case of Flagstaff the "account" developed the fact that considerable re-purchases are being made by influential parties, who had sold at much higher prices, in addition to which the encouraging manner in which the mine continues to open out, and the satisfactory announcement expected to be made at the forthcoming meeting (adjourned till Friday next) have stimulated purchases both for investment and speculation. The mine, it is stated on reliable authority, has during the past few months "developed" resources unequalled by anything hitherto discovered, ensuring a long career of remunerative prosperity.

Richmond Consolidated, 6½ to 6½. Cablegram received:—"43,000 six days. Richmond ore only." Some misapprehension appears to exist as to the bearing on the interests of the company when Richmond ore only is put into the furnaces. The explanation is that for some time past parcels of very rich ore, the produce of small veins in the neighbourhood were purchased and smelted with the

Richmond ore, but as the price asked of late for these outside ores has been raised it is not now considered desirable to purchase them, and it is ascertained that quite as much, if not more, profit results from smelting only the produce of the company's own mine, though the weekly returns do not give so high a gross return in bullion. The mine, moreover, is yielding so largely that the existing furnaces are inadequate to deal with the daily output, and some weeks since the ore on the dumps amounted to 3000 tons. At the same date about 80,000 bushels of fine charcoal had been accumulated. The stratum of iron ore which ran horizontally about 100 feet, is found to have about 40 ft. thick of good ore overlying it, and 60 ft. width alongside of it. It seems probable that the new finds may turn out to be great feelers, or limbs, shot up from the giant lode below, and that may merge in depth into one vast body. The *Eureka Sentinel* of Sept. 9 reports that "the grading party is now within 10 miles of the proposed winter terminus—Chimney Station; the iron has not yet arrived, but is expected daily, having already been shipped from the East. Ties are arriving from Truckee, and are being laid at a lively rate." The remainder of the route to Eureka is being laid out for early completion in the spring. Professor Whitehill, State mineralogist, is making an official inspection of the mines on Ruby Hill; it will be advisable to look out for his report to the Government on the Richmond. The value of the bullion smelted this season amounts to \$82,600. Eberhardt and Aurora shares have declined to 5½, 5½; the latest private dispatches state that everything is going on well. New Pacific, ¾ to ¾; the mine is presenting an improved appearance, on the whole. The agent is raising some ore of a very good quality.

Emma shares have remained without material change, and leave off 1½ to 1½; so long back as Aug. 15 we referred to the fact that difficulties were likely to arise as the result of the proceedings that had been commenced by the directors against the vendor, and last week stated that the mine had been seized on account of a claim of the Illinois Tunnel Company. But, although it is stated the manager informed the board of the fact on Sept. 17, the first official announcement was made only on Monday by the statement "That there is no truth in the report that Mr. Park has seized the mine—all that has taken place is that he has commenced legal proceedings to enforce an alleged claim; and has, as part of such proceedings, issued an attachment against the mine, the validity of which will be decided in the proper legal courts." Last Chance, ½ to 1½. Tecoma, ½ to ¾; a meeting of shareholders has been convened to consider the position of the company. The affairs have become complicated and embarrassed by the presentation of two petitions to wind-up the company. The board were unanimous in their recommendation that the shareholders should subscribe sufficient capital to meet the pressing liabilities. Utah, ½ to ½; there is nothing from the mine this week. The annual meeting is due on Oct. 7.

The shares of the Hydraulic Mines have not presented much animation, although there has been a fair business, especially in Sweetland Creek, which close 2½ to 2½ ex div. The distribution of the dividend has taken place this week. The news from the mine remains the same. Blue Tent, 5 to 5½; the importance of the work now in progress under the superintendence of Col. Tozer appears by private advices to be fully endorsed by Mr. Courtenay, the chairman, who has been on the ground since Aug. 17. The first section to Diamond Creek must be nearly completed, and there will at once be quite a demand for water, as extensive beds of auriferous gravel exist there which the owners have never been able to work for want of water. From this point to Blue Tent on the line of the proposed ditch there are other extensive deposits of auriferous gravel every few miles, and doubtless the whole of the water of the ditch now building might be sold to good advantage, sufficient to make the ditch enterprise a success within itself, not taking into consideration the large body of gravel owned by the company at Blue Tent, where ultimately all of the water will be used to much greater profit. It is fortunate to have intermediate points along the line of the ditch where water can be sold in increasing quantities as the work approaches the point where the company's deposits of auriferous gravel, consisting of over 400 acres in a solid body, and of an average depth of from 400 to 500 ft., is located. This, without the facilities for sales of water, which are known to exist along the line from Diamond Creek to Blue Tent, appear to fully justify the company's proposed ditch outlay, which it is understood will not exceed 18,000l. or 20,000l. The section to Diamond Creek, now nearly completed, covers about half of the cost of the whole work, and embraces all the heavy and costly fluming. The balance of the work, it is understood, will be prosecuted to completion the coming spring and summer; meantime, with present appliances, much better results may be expected for the coming water season than has been realised by the past. The washings in the South Yuba claim have just reached the channel, or blue lead, from which large returns may henceforth be expected; and it is not likely that the Enterprise claim, which has during this year yielded gross something like \$50,000, will yield less the coming season, as it has got through the usual drawbacks of incipient working. Some idea can be formed of the confidence of Californian capitalists in ditch and gravel enterprises when it is known that with their proverbial high rates of interest they are not loth to invest millions of dollars in such undertakings. Instance the North Bloomfield Company, whose gravel beds lie about four miles north of Blue Tent on the same channel, who have expended over \$1,700,000 in running a tunnel, and building a ditch to utilise their property, and on every divide between rivers throughout California where gravel deposits exist water rights are being secured, and canals constructed at great cost. Cedar Creek, 1½ to 1½; there is no fresh news from Col. Ludlam this week. All work has been shut down for the season, except washing on Yankee claim.

Birdseye Creek, 2½ to 2½; a letter from the agent appears in another column. Mr. Powers says that from present appearances he anticipated being at solid bank in Neece and West claim by the end of September. This would give him a splendid face of auriferous gravel on which to commence washing with the new water season. Malpaso, ½ to ¾; Rica, ½ to ¾; Malabar, ½ to ¾; the latest advices appear in another column. Tolima, 3 to 3½; the estimated value of the July consignment of ore amounts to \$11,372, obtained at a cost of \$3649, thus showing a gross profit of \$2903, representing a sterling value of 483l.

Colorado Terrible, 3½ to 3½; that attention will speedily be directed to these shares there can be no question, as the mine has hitherto done well with a vein of a few inches in width, and now that the same has opened out into a course of ore over 2 ft. solid galena, as given in our report in another column, the output of first-class ore will be trebled; in fact, should the lode as now met with in the 6th level continue the same its value is nearly 800l. per fathom. Should it continue for one stop only it will prove a boon to the shareholders. The returns for August are much in excess of previous months, the lode having been more productive of first-class ore in consequence of its increased solidity.

Almada and Trito, ½ to ¾; the profit for August amounted to 1181l., for the corresponding month of last year the profit was 1576l.; the profit for July was 726l.

Cape Copper, 26 to 28 (ex div.); New Quebrada, 3 to 3½. Rio Tinto, ½ dis. to par; good progress is reported with railway and pier, on which 3963 hands are employed, and at the date of the last report 400 tons precipitate and 250 tons pyrites were being loaded.

United Mexican, 24 to 23; in the new concern a communication between the mine of San Miguel, and the workings in San Antonio has been effected, and work has been resumed on the ore in San Antonio. The extraction in four days was 76 cargas, and in the lowest workings 11 cargas, of 6 marcas (33 ounces per ton), were thrown down.

Sierra Buttes, 2 to 2½; Plumas Eureka, 1½ to 2. Independence, 2½ to 2½; the advices from the mine report that the stamps fully employed, and the 4th level still in good pay gold quartz. A telegram with the result of September clean-up is expected during next week.

Port Phillip, 9-16ths to 11-16ths; the quantity of quartz crushed for the four weeks ending July 15 was 5140 tons; pyrites treated, 30 tons: total gold obtained, 882 ozs. 18 dwts., or an average per ton of 3dwts. 10½ grs. Receipts, 3481. 7s. 3d.; payments, 3347. 3s. 6d.

profit, 134. 3s. 9d., which, added to last month's balance of 128. 13s. 7d., made an available balance of 262. 17s. 4d., which was carried forward to next month's account.

Scottish Australian, 1½ to 1½; the sales of coal for the month of July amounted to 10,281 tons. A completed return for June has been received, showing that the sales for that month amounted to 16,356 tons, instead of 14,769 tons as previously reported.

Van, 20 to 25; there is no alteration reported from the mine. On Thursday the directors declared a quarterly interim dividend of 10s. share, payable on the 21st. inst. Van Consols, 24 to 24; a meeting of this company was held yesterday at the Inns of Court Hotel, when the proposition of the directors to form a supplemental company to work the eastern ground, as well as the Van Consols proper, in a more vigorous manner was agreed to by a numerously attended and most influential body of shareholders. Bog, ½ to ¾; the directors have received a circular respecting the reorganisation of the company. They propose to form a new concern with a capital of 37,500l., divided into 15,000 shares of 2½. 10s. each. The shares to be issued to persons at present on the register as with 20s. paid on them, thus leaving a liability of 30s. per share, which is considered sufficient to pay off all the indebtedness, and leave a sum enough to carry on the recommendations made by Capt. A. Waters, in the report published by us about a fortnight ago. There does not appear to be any reason why the shareholders should not ultimately get back the whole of their money—that is if they come forward now and take up the new scheme. We are assured that the directors will not attempt to carry out the reconstruction unless the shareholders give them substantial encouragement. The mine is looked on most favourably in the district, and from all accounts is well worthy of the prompt support of the shareholders. Pennerley, 1½ to 1½; a full report appears in another column. The mine continues much as of late. The intersection of the junction of the Big Ore Warm Water lode is an encouraging feature. West Esgair Lie, 2½ to 2½; from a report which appears in another column, it would seem as though this company were on the point of making a good discovery, the end of the cross-cut having every indication of being near the ore-bearing part of the lode. In the level above there is a good course of ore gone down in the bottom.

Devon Consols, 1 to 1½; since the publication of the four-monthly report an improvement has taken place in the 145 fathom level east, on the new south lode, which is 5 ft. wide, and a good course of ore, worth 8 tons or 40l. per fathom. In the 130 east the cross-cut has reached the north wall of the lode, proving it to be altogether 20 ft. wide—a fine lode of ore, worth 65l. per fathom. The driving of this level (the 130) has been resumed east of the cross-cut, on the south portion of the lode, and the width carried (5 ft.) is a good course of ore, worth fully 7 tons or 35l. per fathom. Penstruthal, ½ to ¾; the first sale of tin ore yesterday realised 53l. per ton. Mine opening out satisfactorily.

Subjoined are the closing quotations:

Bog, ½ to ¾;	Carn Brea, 50 to 55;	Cook's Kitchen, 9½ to 10;	Devon Great Consols, 1 to 1½;	East Caradon, 1 to 1½;	East Lovell, 11 to 12;	East Van, ¾ to ¾;	Great Laxey, 11 to 12;	Hington Down, 1 to 1½;	Marke Valley, ½ to 1;	Pennerley, 1½ to 1½;	Perkins Beach, 1-16 to 3½;	Parys Mountain, 7s. to 9s.;	Penstruthal, 10s. to 12s. 6d.;	Perth Gravels, 13½ to 14½;	South Condurrow, 3 to 3½;	Tincroft, 30 to 31;	Tankerville, 8 to 8½;	West Chiverton, 13 to 2½;	West Basset, 8 to 8½;	West Chiperton, 13 to 2½;	West Condurrow, 2½ to 3½;	West Esgair Lie, 2½ to 2½;	West Lovell, 11 to 12;	West Seton, 20 to 22½;	West Tolgas, 70 to 72½;	Wheat Crebor, 20s. to 22s. 6d.;	Wheat Kitty (St. Agnes), 5½ to 6½;	Wheat Peevor, 2 to 2½;	Wheat Uny, 1½ to 1½;	Wheal Grenville, 4½ to 4¾;	Wheal Malabar, ½ to ¾;	Wheal Minerva, 1½ to 1½;	Wheal Trito, ½ to ¾;	Wheal Uny, 1½ to 1½;	Wheal Crebor, 20s. to 22s. 6d.;	Wheal Grenville, 4½ to 4¾;	Wheal Malabar, ½ to ¾;	Wheal Minerva, 1½ to 1½;	Wheal Trito, ½ to ¾;	Wheal Uny, 1½ to 1½;	Wheal Crebor, 20s. to 22s. 6d.;	Wheal Grenville, 4½ to 4¾;	Wheal Malabar, ½ to ¾;	Wheal Minerva, 1½ to 1½;	Wheal Trito, ½ to ¾;	Wheal Uny, 1½ to 1½;	Wheal Crebor, 20s. to 22s. 6d.;	Wheal Grenville, 4½ to 4¾;	Wheal Malabar, ½ to ¾;	Wheal Minerva, 1½ to 1½;	Wheal Trito, ½ to ¾;	Wheal Uny, 1½ to 1½;	Wheal Crebor, 20s. to 22s. 6d.;	Wheal Grenville, 4½ to 4¾;</td
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## NOTICES TO CORRESPONDENTS.

\*\* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

PETHERICK.—Mr. J. H. Petherick, of Pachuca, Mexico, who is understood to be in England, is requested to send his address to the *Mining Journal* Office for a correspondent.

PURCHASE-HIRE OF RAILWAY WAGONS.—Will any correspondent of the Journal kindly forward me, or state where I can obtain, a blank form of the contract which has to be signed when railway wagons are had upon the condition that after hire has been paid for a certain number of years they become the property of the hirer? Could a couple of hundred of colliery trucks be obtained on the same terms?—H. E.

WEST CHIVERTON.—We could not insert the letter from "Shareholder" without the writer's name being appended. Such personal reflections cannot justifiably be published anonymously; while it has not been shown that Mr. Granville Sharp has not acted as he has in the best interests of the shareholders. Prejudice more than reason seems greatly to have influenced "Shareholder" in writing his long epistle.

COAL MINING IN ITALY.—SASSO FORTE COLLIERIES COMPANY.—The letter from Mr. W. J. Jacob (Rocca Tederighi) shall appear in next week's Journal.

NORTH WHEAL BASSET.—In March, 1873, I received a note from the Chairman, stating that the affairs of this company had been taken out of the Statuary Court at the expense of one of the committee; and in a note I saw in the Journal this gentleman stated that the debts amounted to little over £150,000, and he hoped that the works would now proceed with vigour. May I respectfully ask if anything and what is going on?—W. G.

SIR.—Can any of your readers inform me if the Wye Valley Mine, now being brought before the public, is the same as the Wye Mine, Llanidloes?—ONE INTERESTED.

MICA.—In the Journal of Sept. 19 there is an article on Mica, which treats principally of mica in plates. I shall be glad if any of your readers can inform me whether mica in the massive state is of any value, and, if so, for what purpose it is used?—B.

RECEIVED.—"A Reader" (Rochdale): The details were forwarded by a correspondent. We are always glad to receive such information—"L. U. R." (St. Louis)—"B. S." (Hexham)—"C. E. P."—"Reader" (Wigan)—"Florence"—"A Shareholder" (Lovel) had better write to the office for the information he requires—"Mentor"—"Miner" (Redruth) should send his reply to the journal in which the communication referred to appeared—"Diamond Drill." Next week.

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.

SCALE FOR ADVERTISEMENTS.—Our charge for general advertisements is—for six lines and under, 4s.; per line afterwards, 8d. Average, 12 words per line.

THE MINING JOURNAL,  
Railway and Commercial Gazette.

LONDON, OCTOBER 3, 1874.

## THE CONSUMPTION OF COAL.

Once at least every year we are treated to a learned dissertation on the probable exhaustion of our coal fields, at times by writers of eminence, who appear to have mastered almost every subject that can interest the scientific, the practical, or the general reader. This year has been no exception to the rule. Sure to command attention, the coal question is a favourite one with many able and philosophical minds, and their conclusions would be different to what they generally are were they to take more notice of facts, and go less into the region of speculation. Many of the writers who have handled the subject, and aired their own peculiar views with respect to the future of our coal supply, consider that consumption will go on *pari passu* with the increase in our population. To some extent, this view was held by the Select Committee on Coal in their report to the House of Commons last year, in which it is stated that "The present consumption of coal for domestic use is generally estimated at 1 ton per head for the whole population, and may be assumed to absorb one-third of the entire production. It is probable this rate per head will continue pretty constant, because more economical methods of using coal in dwellings may yet be introduced, yet the increasing wealth of the nation will cause coal to be more liberally used for domestic purposes. The future increase of consumption under this head may, therefore, be expected to coincide with the increase of population." So far as the year has gone this has turned out incorrect, and this is more particularly the case with respect to the metropolis, for we find that the total quantity of coal which was sent there for the eight months ending August last by rail, sea, and canal was 4,694,196 tons, against 5,012,373 tons for the corresponding period of 1873, showing a decrease of 318,177 tons, notwithstanding the large increase that must have taken place in the population. This will give considerably less than 1 ton per annum for the whole of the population for domestic purposes, for it must be recollected that a great deal of the coal sent to London is used for manufacturing purposes as well as for marine and locomotive engines, whilst nearly one-fifth of the entire tonnage is absorbed by the gas companies, for the quantity that went to them in 1873 was no less than 1,430,937 tons. Taking the population of the metropolitan districts (estimated in 1872 at 3,977,569) at 4,050,000 in 1873, it is evident that the actual consumption for household purposes in London is very much less than that estimated by the Commissioners in their report, so that in all probability  $\frac{1}{2}$  ton per head of the entire population is much nearer the mark. So much for the report of the Royal Commission.

One of the most recent of our alarmists with respect to the exhaustion of our coal fields is Mr. W. R. GREG, who, in a paper published in the "Contemporary Review," under the title of "Rocks Ahead, or the Warnings of Cassandra," indulges in some very bold assertions with regard to the probable decadence of England, owing to the working out of her supplies of coal. He states that "It is obvious, unless some great check should come to our prosperity, and to our increasing population and manufacturing productiveness, our annual consumption of coal will go on augmenting, and will soon reach, not 120,000,000 tons yearly, but twice, thrice, or four times that amount." That such an extraordinary change is soon to take place appears to be preposterous, for, as we have shown above, the increase in the consumption of coal does not go hand in hand with the increase of population, whilst there are many reasons why consumption should not go on at the rate it has done of late years. It is admitted, for instance, that there is nearly as much fuel wasted in some of our manufacturing processes as is really utilised, and that we have not up to the present time made much headway in the adoption of means by which no portion of our coal should be lost. But such, we believe, will not always be the case, for despite the warnings of Mr. GREG science will not stand still to allow of the fulfilment of his prophecies. So far from that, we find even at the present time efforts are being made by engineers and others to utilise every particle of coal used in the smelting of iron and for manufacturing purposes, so that there is not the slightest reason why there should not be a decreased consumption in those directions, or that we should have our chimneys, large and small, comparatively free from smoke, and our mining and manufacturing centres far more healthy and pleasant than they now are. This is what has long been looked forward to, and will no doubt ultimately be accomplished. Of late years there has been great saving effected in the North of England in the smelting of ironstone, for the leading iron-masters, according to Mr. I. LOWTHIAN BELL—one of the greatest authorities we have on the subject—have reduced the consumption of coal to make 1 ton of pig-iron from 70 cwt., down to from 41 to 45 cwt., showing a saving of something like 40 per cent. The same gentleman, in his evidence before the Select Committee of the House of Commons last year, said that he considered it was quite possible to economise between two millions and three millions of tons of coal annually in the make of pig-iron alone. Again, it is far from likely that gas will forever continue to be made from coal, seeing

that there are various other means by which a much greater illuminating power can be obtained. With every respect, then, for Mr. GREG, we cannot admit the soundness of his views as to the probable exhaustion of our coal fields, and the consequent loss of our position as the manufacturing centre of the world. Indeed, it appears to us premature to speak of our coal fields as to what they are capable of producing, seeing that their extent and boundary is as yet unknown, for we find that new discoveries are constantly being made. We, therefore, do not think we need trouble ourselves with respect to the time when our collieries will be closed, or believe that the consumption will increase to such an extent as some people imagine, for we have shown that there are various ways in which it will be greatly economised, a process, in fact, which is going on at the present time.

The position taken by Mr. GREG has been assailed, and successfully, we think, in the "Contemporary Review" for September, by Mr. ARTHUR ARNOLD, in a paper entitled "Free Sailing," and who ridicules the idea of our coal being worked out in a given time, or that the rate of consumption can be defined by arithmetical progression. Mr. GREG quotes a sentence from Sir W. ARMSTRONG, and it is re-quoted by Mr. ARNOLD; and it is undoubtedly to the disadvantage of the former, whilst it supports our own views with respect to our future consumption of coal. Sir W. ARMSTRONG's words are—"Speaking generally of coal consumption in all its branches, there can be little doubt that, without carrying economy to its extreme limits, all the effects we now realise from coal could be attained with half the quantity we use." This shows that a great deal has yet to be done before the true value of coal is extracted from it, and how much is left to be achieved by men of science in the present and the future, and how little we have to fear the exhaustion of our stores of fuel for long ages to come. Speaking of the coal famine, however, Mr. ARNOLD makes what we cannot but consider a glaring mistake, for in alluding to it he says that one of the results "was the opening in North Derbyshire alone of pits which are now beginning to turn out a supply of 60,000 tons per week, not an atom of which was available before the coal famine." Speaking with a full knowledge from frequent visits of the progress of coal mining in Derbyshire during the last ten years, we have no hesitation in saying that the statement is incorrect, for the quantity named would be equal to an increase on the entire production of the whole of Derbyshire of 60 per cent. over the output of 1872. But we agree with Mr. ARNOLD that in all probability 1200 years will not find us without coal, and we really cannot see what is to be gained by these constant speculations of writers with respect to our beds of coal. Stimulate and promote economy in every possible way, we say, so as to prolong our stores of fuel for future generations, and for the benefit of the present one; but these constant warnings and alarms will have no effect upon our colliery owners, who will go on raising as much coal as they can find markets for, whilst they will be ineffectual in delaying the opening out of the many new pits now in course of sinking in nearly all our mining districts.

## MWYNDY IRON ORE COMPANY.

This company having acquired one of the most improved machines of the Diamond Rock Boring Company re-commenced boring on their Trencastle property on 12th August last. They reached the bed of iron ore at the depth of 113 feet, and passed through ore 13 feet in thickness, next 16 feet of iron-coloured limestone, and then a second bed of iron ore 5 feet thick, and the boring was stopped on 19th September at the depth of 149 feet.

This hole is the fifth sunk by the Mwyndy Company on their Trencastle property by the diamond borer, and by these operations they have proved at a small cost the existence of a valuable bed of ore.

The borer has now been removed to a spot 200 fathoms east of the above hole, and they are already some distance down.

The directors expect when the ore in the hole has been bored through they will then have no difficulty, by the aid of the sections of the various holes, in fixing on the most advantageous place for sinking the shaft, which will at once be vigorously proceeded with.

## INDUSTRIAL CO-OPERATION.

This is a phrase easily written, but it is one susceptible of many meanings, and one which will convey different ideas to different minds. We only propose now, however, to refer to that idea which has brought about co-operative engine works, co-operative mines, and not a few other enterprises of a cognate nature. Many a learned chapter, from the days of ADAM SMITH downward, has been written on the relations of capital and labour to each other. Divers have been the theories elaborated on the subject, but no political economist has ever yet held that the one can exist without the other. Any system which does not award to each its just rights is faulty; and some—as, for instance, communism—are simply tyrannical and dishonest. All the difficulties of legislation in these days of freedom which have been, and which remain to be, encountered arise from attempts on the one side or the other to make labour the slave of capital, or *vice versa*. Half the wars in the world from the very beginning have been attempts to obtain by the conqueror the labour of the conquered; and the old maxim *vis a visus* meant as much as anything slave labour. Co-operation, on the other hand, means the investment of labour with capital. Thoughtful working men have discovered that capital has the same right to be protected as labour, and that it is only by their union that satisfactory results can be obtained for all. Out of their cogitations came the idea of co-operation. At first it was tried only in the matter of shop-keeping, and the idea was that of an unlimited partnership. It did not succeed, except in a few cases, where the constituents were numerous and the district prosperous. At length the principle began to assume a more definite form—to be tabulated, as it were. And it took this form, that the consumers, being able to produce the custom without which no trade can exist, should furnish their own supplies. This principle has proved wonderfully successful in divers retail undertakings, particularly in Halifax, Rochdale, Oldham, and other densely populated towns in Lancashire. The men who originated—or those who latterly have been at the helm—are persons to whom it would be no exaggeration to attribute great financial genius, so ingenious and so satisfactory are the arrangements in which the profits are divided between consumers and capitalists.

It is obvious, however, that when capital, generally in small amounts, came to be applied to productive works—to manufacture and productions of various kinds which must compete with what may be called single handed capital—difficulties must arise. The mainspring of co-operation is the principle of making the workmen employers as well as employed, and so giving them an ever-increasing and direct pecuniary and personal interest in the work done. This is effected by each worker leaving a definite proportion of his earnings to become share capital, and although he may increase his stake by bringing in any former savings he might have accumulated, no one is allowed to lessen his capital. One of these concerns, of which there are now a good many in the North of England, is the Ouseburn Engine Works, Newcastle-on-Tyne. It arose three years ago out of a strike, but at the annual meeting last week the Chairman, Dr. RUTHERFORD, said that its object was to solve the great problem of how to join capital and labour and prevent strikes.

He complained of unfair competition on the part of other manufacturers, and of "a deliberate and systematic attempt to shut them out of the market for material," in consequence of which they had for long time great difficulty in procuring coal and iron to supply their wants. It appears, too, that they had been hindered by a strike amongst themselves, and a revolt of their boiler makers had produced a loss of profits to divide which the Chairman estimated at 5000l. or 6000l. In spite of all these difficulties he congratulated the shareholders—that is, the workmen—on having made their mark in the engineering world, and pointed with pride to the success of the engines they had put into the screw steamers Vandertaelen and the Ly-ee-moon, both of which had made most successful trial trips, the latter on the Thames, and combined a smoothness of working with a minimum consumption of fuel, quite unusual. The report was adopted with unanimity, but this brotherhood of labour appears to possess no immunity against aggrieved shareholders, and there was a considerable squabble over the election of a new director. The dif-

ficulty, however, was surmounted without going to a poll, the Chairman was re-elected, and the proceedings terminated with a vote of confidence in that gentleman.

## CHAPEL HOUSE COLLIERY.

From reliable information which has reached us, we are able to give our readers some satisfactory particulars of this company's workings since its commencement, at the end of last year, to the end of August last. The output, notwithstanding the numerous strikes and other causes for intermission of work in the district, was 63,614 tons during that period. The demand for the company's coal, which is wanted almost exclusively for shipping purposes, has been such that a further 10,000 tons and upwards were purchased to supply the requirements of the customers, the company acting as merchant, and of course, deriving profits on the transaction. Apart from the merchant's profit thus earned, the evidence given by the large requisitions for the coal is especially satisfactory, as proving that a ready market will be found for the increased raisings which the company will be enabled to make ere long.

The plant belonging to the colliery is of a very complete and efficient nature. When the delivery of the new wagons lately ordered is completed the company's plant, for carriage and shipping, will consist of 200 railway wagons, 26 flats or lighters, and 3 schooners. With such means at command no difficulty can be experienced in delivering coal to customers in much larger quantities than can now be raised; but new pits are being sunk to the lower seams, and when these reach the coal the output (and with it the profits) will be much larger than at present.

That the colliery is being energetically managed, may be readily seen from the remarks we have already made; and that the management is as economical and substantially satisfactory as it is energetic will appear from the following figures:—The cost of raising during the period already referred to has averaged 3s. 5d. per ton for labour, and a further 2s. 3d. (making a total of 5s. 9d. per ton) has covered other charges, such as stores, timber, railway freight, and delivery at Liverpool. The average selling price throughout the same period has been 13s. 3d. per ton, leaving a very large, and, in the shareholders, a very pleasant margin for dividends.

Now, seeing that these figures are not mere estimates, but are the results shown by actually accomplished facts, the Chapel House Colliery deserves to be considered as a most carefully and successfully managed property. And the effect of this careful management of what we believe to be a most valuable colliery is that quarterly dividends at the rate of 15 per cent. per annum are being paid regularly, and we understand a good balance of profit is carried forward each quarter. The next quarterly dividend is now due.

## ECONOMISING STEAM—THE BAXTER ENGINE.

In the Supplement to this day's Journal will be found an illustrated description of the Baxter Steam Engine, which for some time past has been attracting considerable attention in the United States; it appears that the engine consumes only about half the fuel required by ordinary engines; that with it one man can perform the labour of three or four, and that it occupies very little space as compared with the engines, boilers, and furnaces generally used. The engine and boiler are always ready for use, and from the testimonials of efficiency received by the manufacturer—Mr. W. D. RUSSELL, of Park Place, New York—it appears to be giving very general satisfaction. The parts of the Baxter engine being interchangeable, the breakage or failure of any piece need cause but little inconvenience. The workmanship is excellent, so that durability will have to be added to the other advantages of the motor, and it is considered that when the engine becomes more generally known it will be largely adopted than any other.

COAL AND IRON IN THE UNITED STATES.—The replacement of the wooden spans of the Philadelphia, Wilmington, and Baltimore Railroad bridges over the Susquehanna river, at Havre de Grace, with iron is progressing rapidly. Each span weighs about 200 tons, and is composed entirely of wrought-iron. A new branch of industry recently established at Camden, New Jersey—that of manufacturing galvanised iron. This business is carried on by the Reynolds Iron Roofing Company. The anthracite coal movement of Pennsylvania to September 5 this year amounted to 12,151,129 tons, against 13,474,820 tons in the corresponding period of 1873, showing a decrease of 1,323,691 tons. The bituminous coal movement of Pennsylvania to September 5 this year amounted to 2,240,315 tons, against 2,047,277 tons in 1873. It appears that the United States produced last year 2,290,658 tons pig-iron, exclusive of charcoal pig; 721,776 tons of iron rails, 980,000 tons of rolled iron of other kinds, 128,360 tons of Bessemer steel rails, and 40,000 tons of cast-steel.

MANUFACTURE OF IRON IN INDIA.—With a view to adopt some definite line of action in regard to the manufacture of iron in India, the Government some time ago called for detailed information on the subject from the various provincial Governments. The result is a resolution embodying an account of the latest discoveries in connection with iron deposits and the mineral resources in the proximity whereby they may be utilised. Both the coal and iron in the Raneeunge field contain phosphorus, which exercises an unfavourable action in the manufacture of good iron, and there is the further difficulty of procuring materials for promoting fusion. Mr. Hughes, of the Geological Survey, however, thinks that the limestone known as *kunkur*, which abounds in the neighbourhood of the iron ores, may be found useful as a flux. Another means suggested for surmounting this difficulty is the application of Mr. Siemens' process of making malleable iron direct from the ore, which avoids in a great measure the necessity of a flux. It is proposed that specimens of iron ore from different parts of the Raneeunge field be sent to England to be subjected to this process, and the Government of India are prepared to forward thither at the public expense consignments of the ore for that purpose. Offers from those interested are invited, it being understood that the consignments are not to exceed 100 tons in weight. Kumaon is altogether condemned as an iron-working district; on the other hand, the prospects of manufacture in the Central Provinces have been improved by the discovery of coal at Lohara, where iron deposits are found, and the iron ores close to the coal field of Warrora. The chief commission is to be asked to report upon the facilities for establishing a Government iron manufactory in the neighbourhood of Lohara. In South-west Behar, at Palamow, there is a field open, which private enterprise might advantageously occupy. Of all the specimens of iron ore analysed that from Palamow has been found the purest. There is also a coal deposit close there, and if the field turns out to be promising, and private enterprise will avail itself of it, Government offers to improve the communication between Palamow and the head of the Soane canal.

COMMERCIAL PROGRESS OF NEW ZEALAND.—New Zealand beginning to show a sure sign of growing importance by forming "manifest destiny" theory. Mr. Vogel, the Premier, has lately sat on the table of the House of Representatives a remarkable scheme for extending the influence of New Zealand over the whole of Polynesia. It is his belief that New Zealand must sooner or later—sooner the better—make herself the centre of a Polynesian dominion, having the same relation as Canada to the Mother Country. At present, Mr. Vogel says, the colonists cannot regard without alarm the disorders that prevail in some of the islands, and the prospect that some foreign power may obtain a footing in their own neighbourhood. It has been proposed as a means to the great end that a trading company shall be formed in England, with a view of securing by its commercial power a large share of political control in the islands. Mr. Vogel approves of this scheme, but carries it further by suggesting that the New Zealand Government shall have an important share in the management of the company. The company to be, in fact, a Government scheme, New Zealand guaranteeing 5 per cent. for 40 years on the share capital of 1,000,000l., and appointing a managing director and secretary. The company is to have permission to carry on the business of merchants and shipowners, planters, producers, manufacturers, brokers, agents, insurers, &c. &c. If the

and money lenders, in the islands of the Pacific, New Zealand, and Great Britain, and also elsewhere, with the permission of the Government of New Zealand! In return for Government aid the company is to give facilities and reasonable pecuniary aid to missionaries, to abstain from employing forced labour, to establish regular steam communication between the islands and New Zealand, to set up in New Zealand at least one cotton factory, at least one woollen factory, and at least one sugar refinery; to forward all produce to New Zealand; and to ship from the same place all goods sent by the company to the islands, at the same time paying a royalty on all goods shipped to Polynesia which are not the produce of New Zealand. Such are the main outlines of a scheme which, whatever its defects, is certainly not wanting in comprehensiveness and vigour of conception. It is added that the Home Government has already been made acquainted with the project. Its answer, however, had not come to hand at the time of the dispatch of the last mail.

DRAINING COLLIERIES IN GERMANY.—Mr. Henry Davey (of the firm of Hathorn, Davis, Campbell, and Davey, Sun Foundry, Leeds) has just returned from Germany with commissions to carry out some extensive pumping schemes for collieries in Westphalia. These undertakings embody some very important improvements, effected by Mr. Davey, over the old methods of dealing with water. A brief outline of one of the schemes will doubtless interest our readers. The quantity of water to be dealt with is very great, and the depth of the pit is 1200 ft. At a point in the mine 900 ft. from the surface, two 300-horse power compound differential engines and pumps are to be fixed, capable of lifting the water to the surface, and also of supplying power to two hydraulic pumping-engines placed at the bottom of the mine, and employed in lifting the water to the main engines. The main engines are thus 300 ft. from the bottom of the pit, so that the whole of the workings below that level may be flooded without their being lost. The scheme thus embraces two most important points. The old cumbersome and expensive system of pitwork is dispensed with by placing the main engines and pumps underground, and carrying down steam to them; and the safety of the engines from flooding is secured by placing them 300 ft. above the bottom, and employing hydraulic engines to lift the water to that level. The hydraulic engines will work equally well under water, and are under control from the main engine-room.

HINSTON DOWN MINING COMPANY.—As a contrast to the proceedings of many of the mines in Cornwall and elsewhere, we feel a pleasure in referring our readers to a paragraph in another column, with respect to the conduct of the affairs of this mine. It appears that at a meeting of the board of directors, held a few days since, it was determined to make a call of 900/-, not only to meet present wants, but also to avoid the necessity of discounting ore bills for the future, and to place the mine in a sound financial position. When accounts are now being furnished to shareholders by many mining companies showing their indebtedness to merchants and bankers, to the tune of thousands of pounds, and in more than one instance of paying dividends notwithstanding, it is a satisfaction to refer to the actions of the gentlemen comprising the board of directors of this company, and their evident desire to place the property of their co-shareholders in such a position as to ensure for them a genuine and *bona fide* security. We are officially informed that every known debt of the mine (including merchants' bills) is paid to the 8th of last month (September), and, exclusive of the current costs, not a single liability is in existence. This is mining as it should be, and were purasers and committees in Cornwall to follow the example here set them a far better feeling would exist in the minds of those who are rendering, and are still willing to render, that assistance the county now so much stands in need of.

#### REPORT FROM SCOTLAND.

Sept. 30.—The Warrant Market has been very firm during the past week at higher prices. On Wednesday as low as 84s. was accepted, but a steady improvement took place, and the closing price on Friday was 86s. 6d. On Monday a good business was done betwixt 87s. 3d. and 87s. 9d., closing at the best. Yesterday the market opened firmly, and business was done from 87s. 9d. to 89s., closing with sellers at the higher price. To-day the tone has again been firm, with business from 88s. 3d. to 89s. 3d., closing at 89s. The demand for shipping iron continues good, and at present the supply is scarcely equal to the requirements of the dealers. The undertenored prices again show a decided advance on the week:

No. 1.	No. 3.
G.m.b. at Glasgow (deliverable alongside)	93s. 0d.
Gartsherrie ditto	87 s.
Coltress ditto	87 s.
Summerlee ditto	87 s.
Carnbroe ditto	86 s.
Monkland ditto	85 s.
Clyde ditto	85 s.
Govan, at Broxburn	85 s.
Langloan, at Port Dundas	87 s.
Calder ditto	87 s.
Glenarnock, at Ardrossan	86 s.
Eglinton ditto	86 s.
Dalmennington ditto	86 s.
Caron, at Grangemouth, selected, ditto	87 s.
Shotts, at Leith ditto	87 s.
Kinnel, at Boness ditto	86 s.
Bair iron	86 s.
Nail rods	86 s.

#### SHIPMENTS.

Week ending Sept. 27, 1873	Tons 12,073
Week ending Sept. 26, 1874	11,359

Decrease.....	714
Total decrease since Dec. 25, 1873 .....	146,354

Imports of Middlesborough pig-iron into Grangemouth:—

For the week ending Sept. 26, 1874 .....	3,310
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Decrease.....	140
Total increase for 1874 .....	40,249

As we intimated some time ago that a lively demand would inevitably bring about a higher range of prices, we are now experiencing that higher range for warrants as well as for makers' iron, and the bareness of stocks which this temporary demand has made apparent has added a stimulus of its own to the market. But it is to be observed that the number of furnaces at work has been augmented to 113, and this number is likely to be added to till they reach a total of 130 or thereby, so that the make may be made to more nearly approach the demand, and limit the range of prices to such a sum as would prevent iron from becoming unsaleable. The stock in store scarcely exceeds 18,000 tons, and with shipments at 12,000 tons weekly—a portion of which continues to be drawn from store—surprises must be frequent and unavoidable.

The improved demand for Manufactured Iron for shipment continues, with makers' books well filled up; but the home trade is quiet and limited, although prices remain very firm. There is a little more doing in nail rods and rounds and short bars, but angles and plates are not much in demand, local requirements being placed in the North of England chiefly. The copper and brass workers are well engaged, and so are machinists, but the forges are all quieter, except those engaged on marine work.

In Coals there is not much change in prices or demand for shipment, but house coal is firmer with the approach of colder weather, and prices for this description are improving. The returns from the Scotch ports show a slight falling off on the week as compared with last year, but the aggregate is less of the returns from five ports enumerated last year. The shipments as given are 42,800 tons, as against 46,771 tons in the corresponding week of last year, but they are incomplete to the extent indicated. Leith is experiencing the advantage of the strike in Fife and Clackmannan, by largely increased shipments from that port; but there is growing feeling that the lock-out cannot be of much longer duration in these districts, as the men are getting tired of their enforced idleness and want of pay. At a meeting of the masters, held at Burntisland, yesterday, it was agreed to write the miners' secretary, intimating that the pits were now open for the men, under the conditions upon which they had been stopped; but that after work had been resumed the masters would probably grant a conference, to take the bye-laws into consideration. If the miners do not accept the offer now given it is feared that

a somewhat less pleasant course will be resorted to. At Larkhall the strike has terminated on the masters' terms.

A dastardly outrage has been perpetrated at Pollok Colliery, near Glasgow. The colliery pay office is situated at the pit near Lochinch Farm, and it appears that for the convenience of the workmen a few barrels of gunpowder are kept there. The office was left all night with no fire in it at 6 o'clock on Saturday night, but some person had, it is believed, broken in during Saturday night or Sunday morning, and having laid a train to four barrels of powder known to be on the premises the result was the complete demolition of the building. The colliery books were, fortunately, uninjured, the safe having withstood the shock of the explosion, but everything else was blown to atoms. The matter is in the hands of the police, and the proprietor, Mr. Wilson, has offered a reward of 50/- for evidence sufficient to convict the incendiaries. An outrage of a similar character was perpetrated a short time ago in the neighbourhood of Paisley, but the culprits have not yet been discovered. The damage at Mr. Wilson's colliery is about £50/-.

ENGINES FOR HER MAJESTY'S SHIPS.—Orders have just been given by the Admiralty to two local firms of note for engines for three of Her Majesty's ships now in course of construction. Those for the most powerful armoured turret vessel of the British fleet, the *Inflexible*, have been ordered from Messrs. G. Elder and Co., at a cost of 120,000/-; and compound engines for the smaller vessels, *Sheldrake* and *Moorhen*, have been ordered of Messrs. Napier and Sons, for something over 50,000/- each set.

Messrs. R. Napier and Sons launched from their yard at Govan a twin-screw spar-decked steamer of about 1000 tons and 300-horse power, intended for Government service at Japan, built to the order of Messrs. Matheson and Co., London. Mrs. R. A. Napier named the vessel *Meiji Maru* on taking the water.

#### THE SCOTTISH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

Since my last report the amount of business done in this market has been very large, and prices have advanced considerably, and are still maintaining the rise. Attention has chiefly been directed to coal, iron, and copper descriptions, most of which have advanced considerably. In coal and iron, large transactions have taken place in Merry and Cuninghame and Monkland, but Shotts lead the advance with a rise of nearly 10/- per share for the week, in sympathy with the strong advance in the pig-iron market. In copper, Tharsis have been in most demand, and were at one time fully 2/- per share higher than last Thursday's prices, but have since relapsed a little, on the copper market becoming easier and parties realising to secure profits. Fife and Locheore and Capledrae shares are looking firmer, although no transactions have taken place, on the prospect of a speedy settlement of the dispute between the miners and their masters in the Fife and Clackmannan districts. In oil shares the better reports of the state of the trade are showing signs of telling on the share market, although as yet no very marked improvement has taken place. Dalmeney and Young's Paraffin, both dividend-paying concerns, standing at heavy discounts, may be pointed out as likely to advance considerably with better trade. In Americans all have been dealt in, Emma showing a slight improvement; Flagstaff and Last Chance, on the other hand, being dull and neglected at lower prices. It appears to me that the present is a favourable time to purchase shares in these last two mines, and wait for the usual periodical upward commotion to sell at a profit. No alteration has been made in the Bank rate to-day, although an advance was expected in some quarters. A detailed list of the several days' business follows:

On Thursday last a fair amount of business was done, and prices mostly improved. Benhar, buyers at 143/-, with sellers nominally at 145/-; Canadian Copper Pyrites done at 61s., closing 60s. to 62s.; Chillington Iron, 6½ to 63½; Ebbw Vale done at 23½ and 24, closing at these prices; Emma done at 27s. 6d. and 27s., closing 29s. to 29s. 6d.; Port Washington done at 60s. 6d. and 62s., closing 61s. to 62s.; Huntington done at 70s. 71s., 70s., and 69s., closing 68s. 6d. to 69s. 6d. Marbella done at 5½, 5½ 11 16, and 5½, closing 5½ 9 16 to 5½; Merry and Cuninghame were in good request, opened at 70s. 6d. and advanced to 72s., closing 71s. 6d. to 72s. Monkland ordinary done at 97s., 96s. 6d., closing 95s. to 97s.; guaranteed preference done at 83s. Shotts Iron rose 3/- per share, being done at 70 and 71, closing 71 to 71½. Tharsis done at 26½ and 26¾, closing 23½ just; new shares done at 18½, 18 7 16, and 18¾, closing 18½ to 18¾. Young's Paraffin steady, at 5½ to 5½; Scottish Wagon new shares, 22s. to 23s.

On Friday, notwithstanding it being contango day, a large amount of business was done, at generally higher prices. Benhar, 14½ to 14¾; Calntraline 5½ to 5½ 11 16; Canadian Copper Pyrites done at 59s. 6d. to 60s. 6d.; Ebbw Vale quiet, at 23½ to 24; Emma done at 27s. 6d. and 28s., closing 27s. 6d. to 28s. 6d.; Glasgow Caradon firm, at 29s. to 29s. 6d.; Huntington flat, done at 69s. 6d., 66s., and 68s., closing 65s. 6d. to 68s. Merry and Cuninghame again good, done at 72s. 6d., 72s. 71s., 71s. 6d., and 72s., closing 72s. to 72s. 6d.; the all-paid shares also advanced to 9½ buyers. Monkland ordinary rather lower, being done at 92s. and 94s., closing 94s. to 96s.; guaranteed preference unchanged, at 8½. A small lot of Niddrie changed hands at 41s. Tharsis good, and a very large business done in them, from 26½ up to 27½, closing with buyers at that price, sellers asking 27½; new shares done as 18½, closing 18½ to 19. Young's Paraffin firm, at 5½ to 5½; Scottish Wagon, 12½ to 12½; and new shares, 22s. 6d. buyers, 23s. sellers; a small lot changed hands at 22s. 6d. The following were the rates of continuation current to day. Contango: 3d. on C.C. Pyrites; 12½d., 2d., 2½d. on Emma; 2d. on Glasgow Caradon; 3d., 2d. on Huntington; even, 2½d., 2½d., 1d., 1½d. on Monkland ordinary; 6d., 9d., 1s. on Tharsis old; 4½d., 6d. on Tharsis new; 3d., 4d. on Young's Paraffin; even, Omoa and Cleland; backwardations: 3d. on Marbella; 1d., even, 1d. on Merry and Cuninghame; 5s. on Shotts. The principal feature to be noticed in these rates is the evidence that the "bear" accounts are gradually disappearing in favour of "bull" accounts, and this is, of course, an evidence of a return of confidence in the market generally for a rise. The change is most marked in Tharsis old shares, which were at a backwardation last account of an equal amount with the contango now ruling. With the exception of Emma, Canadian Copper Pyrites, Huntington, and Young's Paraffin, the making-up prices are all higher.

On Saturday the usual quietness prevailed. Cape Copper shares rather lower at 29, sellers. Ebbw Vale also easier at 23½, closing 23½ to 23¾. The last sale of copper ore by the Glasgow Caradon Company is now announced, and is very favourable, being 255 tons, realising 1292/-, or an average of 10½d. per ton; while the sale at the same time last year was 255 tons, realising 1042/-, or an average of 8½d. per ton only. The price of the shares was then 46s.; now they can be had for 29s. or 29s. 6d., and they appear very good to buy, as it is difficult to account for a fall of over 30 per cent. in the share when the amount of ore being got out of the mine is the same, and the average price per ton realised for it nearly 20 per cent. higher. Panulicillo firmer, about 1. Rio Tinto also firmer, about 7½ to 7¾. Russia Copper slightly lower, at 25 to 25½.

On Monday a large business was done, and the market was strong. The account for settlement, Oct. 15, opened to-day; the contango day will be Monday, Oct. 12. Benhar in demand, but no seller. Calntraline done at 111s., closing 110s. to 111s. Canadian Copper Pyrites lower, at 57s. 6d. to 58s. 6d.; Ebbw Vale unchanged at 23½ to 23½. Emma done at 28s., closing 27s. 6d. to 28s. 6d. Glasgow Caradon quiet, done at 29s., closing 29s. to 29s. 6d. Port Washington firm at 63s. to 65s.; the all-paid shares were also done at 6, being last quotation. Huntington firmer, at 67s. to 68s. Marbella, 5½ to 5½. Merry and Cuninghame firm, done at 72s. and 72s. 6d., closing 72s. 6d. to 73s. 6d.; the all-paid shares also changed hands at 10, being 9½ higher. Monkland ordinary were very strong, and advanced to 100s.; a large business was done in them, and they finally closed steady at 99s. 6d. to 100s. 6d. The guaranteed preference shares were done at 8½ and 8½, closing 8 9-16ths to 8 11-16ths. Niddrie done at 41s., closing good at 41s. to 42s. Shotts Iron, 72 to 72½. Tharsis shares were very good, and advanced from the opening price—27½—to 29, closing 28½ to 29; new shares also advanced, done at 19 13-16ths and 19 13-16ths, closing 19 13-16ths to 19 13-16ths. Yorke Peninsula were again in good demand at 9s. to 11s.; guaranteed preference were also wanted at par, but no sellers. London and Glasgow Engineering shares are now quoted ex div., the price being 25½. Scottish Wagon old shares done at 12½, closing 12½ to 13½, and the new shares were done at 22s. 6d.

On Tuesday, again, a large business was done, and with steady prices. Benhar strong, buyers at 14½, sellers asking 15½; Bolekow Vaughan, "A" done at 55; Calntraline done at 111s.; Canadian Copper Pyrites done at 57s. 6d., and 57s., closing 56s. to 57s.; Cape Copper wanted at 28, but no sellers. Emma, 27s. 6d. to 28s. 6d.; this company has issued notice to the following effect with reference to the alleged seizure of the mine by Mr. Park:—There is no truth in the report that Mr. Park has seized the mine. All that has taken place is that he has commenced legal proceedings to force an alleged claim, and has, as part of such proceedings, issued an attachment against the mine, the validity of which will be decided in the proper legal courts. Flagstaff offered at 23½, being a fall of ½ per share; Glasgow Caradon done at 29s., 29s. 6d., and 30s., closing 29s. 6d. to 30s. 6d.; Port Washington done at 64s., closing 64s. to 65s.; Huntington done at 70s. and 69s., closing at these prices; Last Chance changed hands at 1; Locheore and Capledrae wanted at 6½, sellers asking 7; Marbella done at 5½, closing 5½ to 5½ 11 16ths; Merry and Cuninghame done at 72s. 6d., closing 72s. 6d. to 73s. 6d.; Monkland ordinary, opened at 100s., and after declining to 97s. 6d. rallied, and close 99s. to 100s.; guaranteed preference done at 8½, closing good at 8½ to 9; Niddrie done at 42s., and more wanted at that price; Rio Tinto are now 9½ paid, and are quoted 8½ to 8½. Scottish Australian started at 1½; the directors of this company have received advices from Sydney, dated Aug. 7, 1874, with reports from the Lambton Colliery to the 5th of that month. The sales of coal for the month of July amounted to 10,821 tons. A completed return for June has been received, showing that the sales for that month amounted to 16,56 tons, instead of 14,769 tons previously reported. Shotts Rosemoean 4/- per share, being wanted at 70, sellers nominally at 82; new shares, 6 to 8½; Tharsis opened at 29, but under the pressure of sales declined to 27½, from which, however, a rally took place, and they close 27½ to 27½; new shares done at 19 13-16ths and 19, closing 19 to 19 13-16ths; Young's Paraffin firmer at 5½ to 5½; London and Glasgow Engineering wanted at 25½, with sellers at 25½; Scottish Wagon, 12½ to 12½; Yorke Peninsula ordinary done at 9s., closing at 9s. to 11s. Guaranteed preference also changed hands at par; the directors of this company have received advices from the committee at Adelaide, with a report from the Kurilla Mine, dated Aug. 10, 1874. This is, of course, not so late information as the telegram received by the directors on Aug. 24 in London, but explains what work was being done just before the discovery then reported was made. Detailed information of it, however, may be expected by the mail due in London next month. If it is as favourable as expected a further advance will likely take place in the shares, but at present prices I would recommend an investment in the preference rather than the ordinary shares.

On Wednesday, the business done was not so large, but the market was firmer. Benhar still strong, buyers offering 16, sellers nominally at 15½. Canadian Copper Pyrites done at 56s. and 57s., closing 56s. 6d. to 57s. 6d. Chillington Iron ½ lower, at 6. Conglog Slate and Slab ½ higher, at 10½. Glasgow Caradon done at 29s. 6d., closing 29s. to 30s. Port Washington done at 64s., 64s. 6d., 64s., and 65s. 6d., closing 63s. to 64. Huntingdon done at 69s., closing 68s. 6d. to 69s. Islay

nection with the individuals immediately concerned, and should not be suffered to die without a struggle. It is almost the sole relic of the state of things of which we have spoken, in which the miner was more of a partner with the lord than a mere tenant, and in which he had his well-recognised and defined rights of ownership in the undertaking which his knowledge and skill had established.

#### REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

*Oct. 1.*—The Iron Trade of South Staffordshire, although in some respects improved, is still more or less in an unsettled state, owing to the uncertainty which prevails as to the course of prices. Representatives of the leading houses on 'Change in Birmingham to-day declared that it was very doubtful whether any reduction in quotations would be made on Quarter-day, and it is undoubtedly true that Earl Dudley, Messrs. Barrow, and other firms, whose quotations usually rule the market, have their order-books tolerably well filled. Supposing the standard of 12*l.* per ton for marked bars to be maintained, a stimulus will be given to the selling price of inferior brands, which have been discounted during the last fortnight in anticipation of the expected reduction in the rate for branded iron. Common bars are now changing hands at 9*l.* 15*s.* to 10*l.* 5*s.* per ton, and the rate for rods, hoops, and strips is in the usual proportion. Sheets and plates continue to maintain a steady enquiry, and prices are well supported. In the galvanised iron roofing trade a decidedly improved business is experienced. The pig-iron branch is steadily, though not very rapidly, improving. Common cinder pig is quoted 3*l.* 2*s.* 6*d.* to 3*l.* 7*s.* 6*d.* per ton; all-mine ditto, 5*l.* to 5*l.* 15*s.*; and intermediate qualities in the usual proportion. Arrangements are being made for the re-lighting of several additional blast-furnaces in various parts of the district, and the total number blowing bids fair soon to present a fair average.

The South Staffordshire coal trade is a degree steadier as to demand, but there is still a good deal of irregularity in quotations. The reduced price lists of Earl Dudley and other leading firms have been sent out to-day in accordance with the agreement made a fortnight ago. The reduction on best coal is 3*s.* per ton. The quotation list will now be as follows:—Earl of Dudley—Best thick coal, 18*s.* 6*d.*; seconds, 17*s.*; furnace, 13*s.*; steam, 12*s.*; engine slack, 7*s.*; fine slack, 3*s.* 6*d.*; heathen coal, 16*s.*; ditto lumps, 12*s.*; New Mine coal and lumps, 12*s.*; Ramrod Hall thick coal, 16*s.* 6*d.*; furnace ditto, 12*s.* 9*d.*; lumps, 12*s.*; forge lumps, 11*s.*; and slack, 8*s.*—West of Dudley: Best thick coal, 18*s.*; seconds, 13*s.*; lumps, 12*s.*; steam, 11*s.* 6*d.*; screenings (bright), 10*s.*; steam screenings, 8*s.* 6*d.*; engine slack, 6*s.*; heathen coal, 18*s.*; ditto lumps, 12*s.*; ditto screenings, 10*s.*; brooch coal mixed, 15*s.*; screenings, 13*s.*; and slack, 6*s.* These prices are all per ton of 2240 lbs., weighed over machine into boats or carts at the collieries specified. Common forge coal in the thin coal part of the district is 10*s.* to 12*s.* per ton, and there is a good deal of competition for orders.

An extraordinary general meeting of the Sandwell Park Colliery Company was held at the colliery, on Tuesday afternoon, for the purpose of confirming and making special the resolutions, which were duly passed by the necessary statutory majority at an extraordinary general meeting of the company, held on Sept. 3. The Chairman said it might be interesting to the shareholders to know that the new shaft had been sunk to a depth of 48 yards, and that the sinking was proceeding at the rate of 7 or 8 yards per week. The headway between the two shafts had been carried 46 yards in the direction of Sandwell Park, and the coal was everything that could be desired. The shareholders afterwards inspected the works at the colliery, and found everything highly satisfactory.

Sandwell Park Colliery shares are quoted 50 to 55; Pelsall Coal and Iron, 2*½* to 2*¾* *s.*; Chillington Iron, 6*½*, sellers; Cannock and Huntington Colliery Company (Limited) 4*½* *s.*, sellers; J. Bagnall and Sons, 7*½*, buyers; Patent Shaft and Axle, 5*½* prem.; and Staffordshire Wheel and Axle, 2 prem. The issue of 7 per cent. debenture bonds by the Darlaston Steel and Iron Company (Limited) has been subscribed for to the extent of 30,000*l.* in excess of the amount to be allotted. There are buyers of the bonds at 2*½* to 5 prem.

The North Staffordshire Institute of Mechanical and Mining Engineers made an excursion to Hyde Junction, on Monday, to visit various works in the district. About 180 members joined the excursion. On their arrival at the station they were received by Mr. Adamson, of the firm of Adamson and Sons, engineers, Hyde, who conducted them through the works and explained the various processes to them. After this they visited the Astley deep pit, and some cotton and spinning mills in the neighbourhood, and were then entertained at dinner by Mr. Adamson, at the Victoria Mills, Hyde Junction, where Mr. Adamson delivered an address, and Mr. Homer, the president of the Institute, replied in suitable terms.

The scrutiny of the accountant as to the selling prices of iron in South Staffordshire during the last three months, by which the rate of wages for next quarter is to be determined, has not yet been completed, but it is computed that the result will be a reduction of 1*s.* per ton in the rate for puddling, and a proportionate reduction in the wages of other ironworkers.

In North Staffordshire the current demand for iron is easier, but the pressure for delivery of orders booked is very great. The mills are, as a rule, in full production. For pig-iron the demand fairly well maintains the improvement recently noted. Good forge pigs are quoted 80*s.* per ton, delivered in Wolverhampton, and stocks are at this figure being steadily reduced. Coal and ironstone are both in abundant supply, and prices are weaker.

We regret to announce the death of Mr. Sampson Lloyd, J.P. for Wednesbury, which event took place at his residence at Arley House, near Stourport, on Saturday last. The deceased gentleman came to Wednesbury in 1835, on the retirement of his brother, Mr. G. B. Lloyd, to take his place as partner, and superintendent of the engineering department of the well-known works of Lloyds, Foster, and Co., which had been founded by his brother, Samuel Lloyd, in 1820. During the time he was connected with these works they were considerably enlarged, and in 1867 they were transferred to the Patent Shaft and Axtree Company, of which he was deputy-chairman at the time of his decease. He was also connected with a large number of other concerns, and occupied the position of chairman of the South Staffordshire Waterworks Company and chairman of the Darlaston Steel and Iron Company.

From the official return just issued (which was published in last week's Journal) it transpires that the mines in South Staffordshire and East Worcestershire under the care of Mr. James P. Baker, the Government Inspector, and his assistant, Mr. W. B. Scott, number 450, and that connected with the mines there are about 2000 pits. This is by far the largest number of pits in any of the thirteen inspection districts in the United Kingdom. The next largest in number is the Yorkshire district, of which Mr. F. N. Wardell is the Inspector. In that case the pits number 1200, and the mines 491. During the official year Mr. Baker and Mr. Scott together have made 110 underground inspections, and Mr. Baker has made 336 visits. Mr. Scott's visits number 115, of which 190 were to collieries. The mines under the care of Mr. Thomas Wynne, Government Inspector for North Staffordshire and Shropshire, who, up to Sept. 30, had Mr. Gray as his assistant Inspector, but who is now assisted by Mr. B. Samuel Gilroy, number 240, and the pits about 1000. Mr. Wynne and Mr. Gray have together made 129 underground inspections; Mr. Wynne's visits number 125, and those of Mr. Gray 34. In South Staffordshire and East Worcestershire the expenses of carrying out the Mines Inspection Act in the twelve months are set down at 1023*l.* 7*s.* as salaries, 240*l.* 12*s.* 10*d.* as travelling expenses, and 159*l.* 12*s.* 6*d.* as personal allowances. The expenses in the same order for North Staffordshire and Shropshire are 936*l.* 18*s.* 9*d.*, 271*l.* 1*s.*, and 191*l.* 3*s.*

The inquest on the three men killed by the accident on Sept. 16, at the Charity Colliery, Nuneaton, was resumed at Bedworth on Wednesday, and resulted in a verdict—

"That it is our unanimous opinion that great laxity has existed in the working of the mine, and we are further of opinion that a man should be in charge of the brow of the incline, and not be allowed to attend to any other duties than those which attach to the trucks or tubs employed during the time the men are ascending or descending the incline. We further think that efficient brakes should be supplied. Further, that Wilkins, the underviewer, and Gilbert, the contractor, are highly blameable, the former for placing so incompetent a person as Denis in such position, and the latter for withdrawing Ivons from his proper duty as brownman."

The absence of discipline appears to have been marvellous. The brownman appears to have also had to attend to the duty of giving out candles to the men, and was absent from his post, his duty being performed by a lad when the accident occurred. Thomas Gilbert, the engine-driver, was not in the habit of waiting for any formal signal to lower the men, who shouted to him instead; Jones, one of the contractors for drawing the coal, did not make it a practice to observe the rules, because, "to tell the truth, he had no more power over the men than a piece of paper. Wilkins took all power out of his hands;" and William Gilbert, one of the contractors, gave Ivons, the brownman, the order to give out the candles.

**THE IRON AND COAL TRADES OF NORTH STAFFORDSHIRE.**—The quarterly meeting of the North Staffordshire Iron and Coal Masters' Association was held on Thursday, at Hanley, Mr. Wragge in the chair. Trade was reported generally quiet, with nothing of importance doing in any department. It was mentioned that all contracts and rates of wages of ironworkers would terminate on Saturday, under the agreement in force, and a new scale of wages would come into operation. It was decided by the blast-furnace proprietors to give notice on Saturday of a reduction in wages of 10 per cent., to persons employed at the blast-furnaces of North Staffordshire, to take effect at the end of 14 days.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

*Oct. 1.*—The Iron Trade in both South and North Derbyshire is in a tolerably healthy state, so that there has been scarcely any falling off in the production of raw iron for some time past. On the Erewash Valley line there is a considerable number of furnaces in blast, and the Butterley Company are importing a large tonnage of stone from Northamptonshire, some of it a carbonate giving more than 40 per cent. of metallic iron. The plate and other mills are working very well, whilst the foundries are doing a very good business in gas and water pipes, pillars, cylinders, and general castings. The demand for steam coal has been very good of late, both for shipment and for home consumption, so that no stacks are to be seen at the pits. House coal is also in fair request, and a large tonnage has been sent during the week to London from Clay Cross, Langley Mill, Eckington, and Codnor Park. There is some agitation at Butterley with respect to several of the men that took an active part recently in making demands upon the company, and who in consequence were not allowed to resume work; the men, however, have been keeping them, and have made several efforts to have them reinstated, but so far ineffectually. A little more time, however, in all probability, will have the effect desired by the men, and the lesson taught will, doubtless, not be easily forgotten.

The Sheffield Trades have undergone but little change during the week, but some considerable alterations have taken place at some of the largest places. At the Atlas Works one of the Bessemer rail mills has been put down, and the men discharged. This is attributed to the keen competition, and the low price at which Bessemer rails are now being produced. The Nunnery Colliery, and the New Winnings, the property of the Duke of Norfolk, have been taken by a company formed in the town, so that his grace's interest in them otherwise than as the lessor of the coal will now cease. The collieries were a few years since worked by Mr. Huntsman, and it is evident that even coal mining is not such a profitable matter as it has been. In South Yorkshire the collieries have been doing very well, and a heavy tonnage of steam coal has been forwarded to the Humber ports for shipment to the North of Europe, the trade to which is now drawing towards a close for the present year. Engine fuel is not in such good demand as it has been, and prices are easier. New collieries are being opened out in all directions, so that in a year or two the productive power of South Yorkshire will be immensely increased.

The excessive competition that has of late prevailed in the steel rail trade, and the impossibility there has been to obtain orders at remunerative prices, have induced the directors of John Brown and Company (Limited), Atlas Works, Sheffield, to close one of their mills and discharge the workmen. They are adapting the machinery to the manufacture of plates. About 600 men are affected by the change, and many of them are now idle.

#### TRADE OF THE TYNE AND WEAR.

*Sept. 30.*—The Coal Trade has been extremely quiet during the past week, the foreign trade having fallen off considerably. The demand for all kinds of coal is limited; there is no life in any branch of the trade, and, of course, small and manufacturing coals are quite a drug. In the Blyth district the collieries have been kept pretty well employed so far, and the shipments from that port have been on a liberal scale of late. The sitting of the Court of Arbitrators to settle the difficulty in the Durham coal trade was to commence on Thursday, Oct. 1, but so much difficulty has been met with in collecting the necessary information on both sides, that it has been determined to postpone the day of meeting until Oct. 7, when the gentlemen composing the court will meet at the Station Hotel, in Newcastle. Mr. Russell Gurney, the Recorder of London, has been nominated by the arbitrators to fill the post of umpire.

**NEW WINNING FOR COAL.**—The first sod in connection with the sinking of a large shaft to win the coal in the Henshaw royalties, near Haltwhistle, was cut a few days ago by Mr. Clark, of Featherstone, in the presence of a number of gentlemen. Mr. Clark, in an appropriate speech, alluded to the large extent of the coal field, and its easy access to the various markets by railway. He had no doubt that the venture would prove successful and profitable. The shaft to be sunk is 12 feet in diameter, and the seam, which is a valuable coking one, is expected to be reached at a moderate depth. These coal beds are situated at the extreme western edge of this coal field, and near the lead measures, which are found only a short distance in a south-westerly direction from these coal mines.

An extraordinary occurrence has taken place at the Addison Pit, Stella. The workings in the Brockwell seam have, it appears, been some time advancing towards some old workings supposed to be filled with water, and, of course, borings were made in advance of the drift to prove and run this water off; however, on Monday week the men holed into the old workings by means of the bore-rods, but instead of meeting with water a large quantity of inflammable gas burst out with great violence, and although the men were working with Davy safety-lamps they proved in this case to be no safeguard, for the current of gas filling the lamps internally with flame also forced the flame through the gauze, and the face of the drift being filled with flame the brattices and coal were thus set on fire. Fortunately the men escaped without injury, and afterwards a dam was built up, so as to separate the fire from the other extensive workings, and it is hoped that the fire will be thus extinguished. This case ought not to be lost sight of by mine owners and managers. It is evident that the Davy lamp is not suitable for use when sudden and violent eruptions of inflammable gas may be expected. In such cases the Stephenson lamp is no doubt the safest, as when it becomes filled with gas the light is extinguished, and there is no further danger.

The iron trade continues quiet on the whole, but the market at Middlesborough on Tuesday was a little firmer. No. 3 pig-iron was quoted 66*s.* to 66*s.* 6*d.*, which was a slight advance on former rates. Prices have advanced in the Scotch markets, and as the shipping trade is drawing to a close this causes an increased demand, which is, however, only of a transient character. No. 4 forge was firm at 58*s.* to 58*s.* 6*d.* No. 1 was also firm at 70*s.* net cash. The manufactured iron trade is improving slowly. Rail manufacturers are in most cases receiving sufficient orders, but a few firms refuse to work their rail mills, as the prices are not considered remunerative. The prices of rails are firm at 7*s.* 15*s.* to 8*s.* for heavy rails, and 8*s.* 10*s.* for light rails. Ship-plates are 9*s.* 7*s.* 6*d.* Common bars 9*s.* to 9*s.* 5*d.* The shipbuilding trade is brisk. Mr. Pearson, of Stockton, launched a fine vessel for the Mediterranean last week. The Cleveland iron ore mineowners have held a meeting and decided for the present not to take any further steps towards reducing the wages of the miners and others. Coal and coke are still falling in value.

**NORTH OF ENGLAND INSTITUTE OF MINING AND MECHANICAL ENGINEERS.**—A general meeting of members will be held in the

Wood Memorial Hall, on Saturday. The business to come before the meeting is as follows—A number of new members are to be elected, and also students. The number of members in the society now exceed 800, and they are increasing rapidly. After the disposal of the routine business the following papers will be read:—"On the little Limestone and its accompanying Coal in the Southern half of Northumberland," by Mr. G. A. Lebour, F.G.S., &c. This paper will possess much interest, as great exertions have been made late to get coal in the western portion of the country, where coal is scarce and dear. On the "Water Supply of Newcastle," by Mr. S. Newall. This subject unfortunately possesses too much interest to Newcastle, and the whole of the Tyne district is in a bad plight owing to a very deficient supply of water of inferior quality. Mr. Newall has a scheme for supplying the district with water of excellent quality, and in ample sufficient quantity. He proposes to bring the water from Ullswater Lake in Cumberland by means of a canal. It is quite possible that the scheme may be feasible so far as the engineering question is concerned, but it has one very serious defect. The scheme would cause an enormous outlay, probably upwards of 1,000,000*l.* would be required to execute it, and a long period would also elapse before any benefit could be derived from it. The distance to Ullswater is upwards of 60 miles from Newcastle, and an abundant supply of excellent water can be obtained much nearer home on the south side of the River Coquet; on the Simonside Hills an abundant supply can be had, the distance from Newcastle being about 30 miles, or about 25 miles from the water company's great reservoir at Hallington. The works necessary to secure the water would, it is probable, only cost about one-third the amount required for Mr. Newall's scheme.

A valuable silver tea and coffee service and an address has been presented to Mr. John Simpson, manager at the High Heworth Colliery, by the officials, workmen, and a few friends, on the occasion of his marriage, as a token of their esteem. Mr. Jos. Bailey read the address, and Mr. Jos. Heckels presented the service, and a gold dress ring to Mrs. Simpson.

#### THE CO-OPERATIVE MINING SOCIETY (LIMITED).

The first ordinary general meeting of this society was held on Saturday at Newcastle-on-Tyne, when there was a very large attendance of shareholders. The chair was taken by Dr. Rutherford, chairman of the society. The report of the committee stated that, having regard to the shortness of the period during which they had had possession of Monkwood Collieries, the unsettled condition of the coal trade, and the difficulties incidental to a new enterprise, they could not reasonably expect greater results. As yet, the workmen in the collieries have not yet become members, and they think it of great moment that every workman should be interested in the results of his daily work. The committee strongly recommend the members and others interested in the success of the society to increase its capital, so that they may be able to secure a colliery in Northumberland or Durham. The share capital up to date amounts to 34,440*l.*, and on loan on debentures to 2570*l.*

The Chairman stated that the society had now been in existence for about two years, and that the miners of Northumberland and Durham had given it their very hearty support. This remark applied as well to their fellow-workmen in Cumberland and other districts. On June 30 they had 4125 (*sh.*) shares taken up, town which was paid the sum of 18,467*l.* 6*s.*. Since then, however, the share capital had been increased to no less a sum than 34,440*l.*; and that very day a considerable sum had been received towards new shares as well as debenture bonds, the debenture bonds amounting to between 2000*l.* and 3000*l.* He congratulated the shareholders on the fact that, though they had had considerable difficulty in getting a colliery, in consequence of the feeling generally manifested towards co-operative societies, they were now being recognised as no unimportant concern, and the offers were coming in on all hands. The society had negotiated, and almost completed, the purchase of a colliery in Derbyshire, and had been in possession since March of the present year. He had every confidence that they would be able, by strict and careful management, to make this colliery a good success, but he thought they could not stop there. His advice was that every member should do his utmost to increase the society's capital; and he recommended that each man, on his return to his own locality, should place the society's claims before his fellow-workmen, so that by Christmas they might be able to add another 30,000*l.* to the funds, and thus be in a position to purchase a colliery near Newcastle. He further stated that at present they had an offer of a good going colliery near Newcastle, and carried, after a few questions had been answered. The whole of the miners having resigned, in order to give others a chance of being elected, the following gentlemen were declared duly elected, after a show of hands had been taken for each candidate:—Messrs. Rutherford, Burn, Nixon, Young, Crawford, Bryan, Brown, Cramon (old members); Messrs. Elliott, Foreman, Patterson, Pryor (new members). The proceedings terminated with the re-election of Messrs. Benson, Eland, and Company as auditors, and the usual vote of thanks to the officials and Chairman.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

*Oct. 1.*—The quantity of iron cleared from the local ports during the past week has been particularly small, and it indicates clearly the dulness which overhangs the trade. Ebbw Vale has cleared 120 tons to Wollenden, and 1018 tons to Tucanhano, and Guest and Co. 480 tons rail. There has been but little change in the position of the trade during the past week, and this is not so much to be wondered at when it is remembered how near the end of the quarter is. Buyers are only doing a hand to mouth business just now, as they are waiting to see what quotations will be fixed for the next quarter. They do not run much risk in this, because there is little fear of prices being advanced; the state of the trade will not allow of it, but the probability is in their favour that quotations will be reduced. It cannot be expected, however, that quotations can be lowered to any great extent. A rumour was circulated last week that a third reduction in the wages of the ironworkers was to be enforced, although it was previously understood that no further alteration was to be made in the rate of wages this year. It was originally intended by the ironmasters to carry out three drops of 10 per cent., so as to make the wages rate proportionate to the prices obtained for iron; but when the prospects of the trade began to improve the masters seemed anxious to keep the wages up as much as they could. But the cause for the reports that the third reduction was to be carried out was the reluctance with which customers were placing orders at the quotations asked. The same features are still to be noticed in the Tin-Plate Trade; business is very slow, and the manufacturer has still to be restricted. The Coal Trade continues to improve gradually, and there is reason to believe that an active business will be done throughout the winter. Prices have not altered to any extent during the last week or two.

At a meeting of the Monmouthshire and South Wales Colliery Association held this week, it was agreed to issue the following notice to all the collieries except Caerphilly:—

"Notice is hereby given to all persons employed at this colliery, that the engagement from day to day of all persons employed at this colliery shall cease as of and from the 30th day of September instant, and that all persons who after that day be engaged at this colliery under the following conditions. That the contract between the owner of this colliery and all persons employed theretofore shall continue until it be continued by notice given by either party on the first day of the preceding calendar month to expire on last day of the same month inclusive. That no person employed at either of those collieries during that month who is not at work at, or while either of those collieries shall continue on strike, shall obtain work at any other colliery in the Association shall be subject to be discharged from his engagement at the end of any day's work without previous notice."

Colliery enterprise is still rife in this locality. One of the most important coal concerns in this district is about to be formed into a limited liability company, and in this instance the new features introduced of not only taking over the collieries, but also the business of the firm that have hitherto been the owners. The firm is that of Messrs. Richard Power and Co., of Cardiff, Swansea, London, and Liverpool, and in addition to taking a large interest in the company themselves, they guarantee a dividend of not less than 10 per cent. for five years. Mr. H. Russell Evans, of 52, Lombard street, London, and Newport, is bringing out the company.

A purse of 55*l.* has been presented to Mr. Strange by the workmen on his leaving the Ebbw Vale Works.

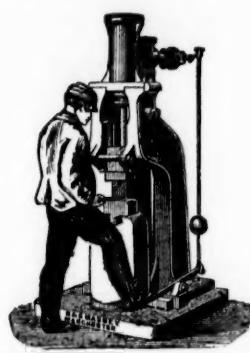
The Ebbw Vale Company are sinking two new pits, one for the purpose of working the upper seams



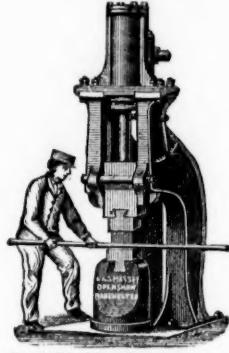
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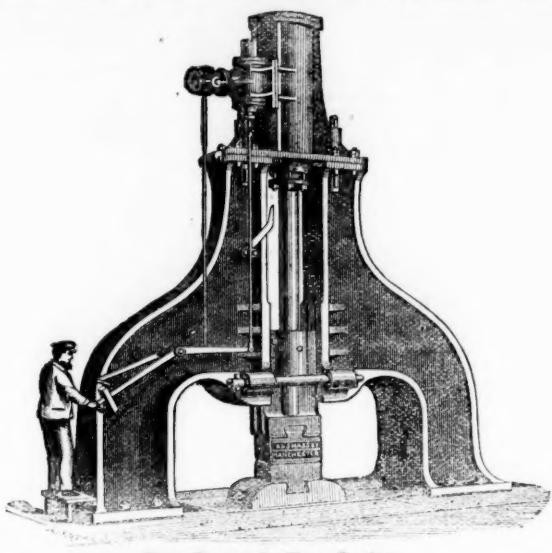
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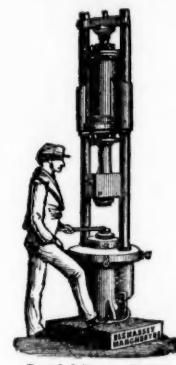


General Smithy Hammer.

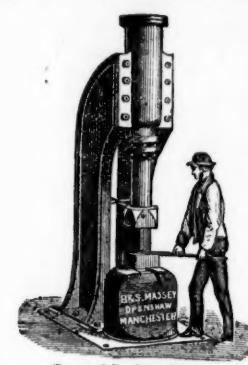


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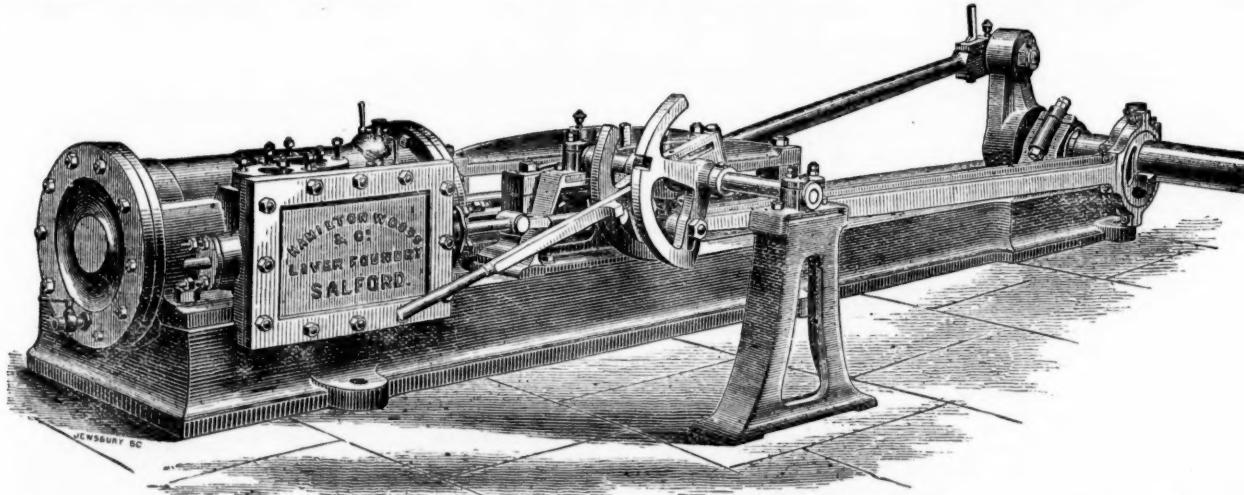
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2000 Alt-y-Crib, t, Talbont*	2 0 0	-	-	-	0 0 6	0 0 6	Feb. 1873
3000 Bampfylde, c, i, mn., Devon*	1 0 0	-	5%	5%	54 5%	0 2 0	June 1873
5500 Blaen Caelan, s-l, Cardigan* (24 sh.)	3 10 0	-	-	-	0 10 9	0 2 0	June 1873
200 Botallack, t, c, St. Just*	116 5 0	22	20 29%	20 29%	619 15 0	5 0 0	Aug. 1872
10000 Bronfoddy, * s-l, Cardigan	1 7 6	1 4	1 4	1 4	2 2 0	0 0 6	Jan. 1872
4000 Brookwood, c, Buckfastleigh	1 16 0	4 4	4 4	4 4	3 18 6	0 4 0	July 1874
3348 Cargill, s-l, Newlyn*	5 4 5	2	1 4	1 4	4 16 2	0 12 6	Oct. 1872
6400 Cashwell, t, Cumberland*	2 10 0	-	-	-	1 6 6	0 2 6	Aug. 1873
1000 Carr Brea, c, t, Illogan*	35 0 0	57 3%	55 57%	55 57%	308 0	1 0 0	Feb. 1872
6000 Cuth, & Jane, l.* Penrhynedraeth	5 0 0	-	-	-	0 7 8	0 7 6	June 1873
2450 Cook's Kitchen, t, Illogan*	20 4 9	11	10 11	11	11 17 0	0 7 6	Jan. 1873
10240 Devon Gt. Consols, c, Tavistock* §	1 0 0	1	3% 1%	116 15 0	5 0 0	Aug. 1872	
4296 Dolcoath, c, t, Camborne	10 14 10	48	48	48	104 14 2	0 10 6	July 1874
6500 Drake Walls, t, c, Calstock	5 0 0	-	-	-	0 2 0	0 2 0	July 1874
10000 East Balleswidden, t, Sancreed*	1 0 0	-	-	-	0 2 11	0 5	Feb. 1874
6144 East Caradon, t, St. Cleer*	2 14 6	1 4	1 4	1 4	14 19 0	0 2 0	Oct. 1874
300 East Darren, t, Cardiganshire	32 0 0	-	-	-	224 10 0	1 0 0	Oct. 1874
6400 East Pool, t, c, Illogan	0 9 9	10	8 2	8 2	26 11 0	0 2 6	May 1873
1906 East Wheal Lowell, t, Wendron*	5 19 0	12	11 12	20	20 10 0	0 7 6	July 1874
8000 Exmouth, s-l, Christow	0 7 6	-	-	-	0 1 0	0 1 0	May 1873
2800 Foxdale, t, Isle of Man*	25 0 0	-	-	-	80 15 0	0 10 0	Sept. 1872
40000 Glasgow Carr, t, (30,000 £1 p.)	10,000 15 0	136 1 1/2	136 1 1/2	136 1 1/2	0 5 10	0 1 0	Aug. 1874
15000 Great Laxey, t, Isle of Man*	4 0 0	-	-	-	16 17 0	0 6 0	Apr. 1874
25000 Great West Vict., t, Cardigan*	2 0 0	1 4	1 4	1 4	12 11 0	0 2 0	Aug. 1874
6908 Great Wheal Vor, t, c, Helston*	40 15 0	-	-	-	15 19 6	0 2 8	June 1872
6400 Green Hurlin, t, Durham*	0 6 0	-	-	-	1 8 0	0 4 0	May 1874
20000 Grogwinion, t, Cardigan*	2 0 0	2 1/2	2 2 1/2	2 2 1/2	0 8 0	0 8 0	July 1874
1024 Herodsfoot, t, near Liskeard*	8 10 0	3 2	3 3 1/2	3 3 1/2	62 5 0	0 15 0	Oct. 1872
18000 Hindgat Downs, c, Calstock* (1 £1 sh.)	1 0 0	-	-	-	0 3 11 1/2	0 6 0	Mar. 1873
25000 Killaloe, s-l, Tipperary	1 0 0	-	-	-	1 6 0	0 1 0	July 1874
400 Lisburne, t, Cardiganshire	15 15 0	-	-	-	564 10 0	1 0 0	July 1874
512 Lovell, t, Wondron	10 0 0	1 4	1 4	1 4	0 17 6	0 1 6	Jan. 1874
11000 Melindur Valley, t, Cardigan*	3 0 0	2 4	2 4	2 4	0 3 7	0 3 7	June 1874
9000 Minera Mining Co., t, Wrexham*	6 0 0	15	15	15	63 12 0	0 1 6	Sept. 1874
20000 Mining Co. of Ireland, c, t, l*	7 0 0	-	-	-	0 8 0	0 8 0	July 1872
12000 North Hendre, t, Wales	2 10 0	-	-	-	0 15 0	0 2 6	June 1874
2000 North Levant, t, c, St. Just*	11 9 6	5	4 4 5	4 4 5	4 13 0	0 12 0	Sept. 1873
7000 Old Treburgett, s-l, ordinary shares	1 0 0	5%	5%	5%	0 0 9	0 0 9	Feb. 1874
6000 Old Treburgett, s-l, (10 per cent. pref.)	0 10 0	5%	5%	5%	0 10 0	0 10 0	Feb. 1874
6894 Pedn-an-drea, t, Redruth*	9 2 0	-	-	-	0 5 0	0 5 0	Nov. 1871
8000 Penhalls, t, St. Agnes	3 0 0	1 3	1 1 1/2	1 1 1/2	3 5 0	0 2 0	July 1874
50000 Penstruh, t, c, Gwenapp*	2 0 0	5%	5%	5%	0 1 0	0 1 0	Nov. 1873
6000 Phoenix, t, c, Linkinhorne*	4 13 4	4 3 2	4 4 1/2	4 4 1/2	39 19 10	0 4 0	Nov. 1872
1722 Polberro, t, St. Agnes	15 0 0	-	-	-	1 12 6	0 5 0	Mar. 1872
18000 Prince Patrick, s-l, Holywell	1 0 0	-	-	-	0 7 0	0 2 0	July 1874
1120 Providence, t, Lelant*	18 16 7	2 4	2 4	2 4	104 12 6	0 10 0	Sept. 1872
2000 Queens, c, t, Holywell*	2 0 0	2 2	2 2	2 2	0 2 0	0 2 0	Sept. 1874
2000 Roman Gravels, t, Salop*	7 10 0	14 2	14 4	14 4	4 2 0	0 8 0	Aug. 1874
10000 Shelton, cl, t, St. Austell	1 0 0	-	-	-	0 1 0	0 1 0	Feb. 1872
512 South Caradon, c, St. Cleer	1 5 0	100	95 100	95 100	70 15 0	0 2 0	July 1874
6000 South Carn Brea, t, Illogan	1 17 6	2 4	2 4	2 4	1 6 8	0 1 6	Nov. 1870
6000 South Darren, t, Cardigan*	3 6 6	-	-	-	0 9 0	0 4 0	Nov. 1871
8771 St. Just Amalgamated,*	3 10 0	-	-	-	1 6 0	0 1 0	July 1874
12000 Tankerville, t, Salop*	6 0 0	7 2	7 2	7 2	3 8 0	0 6 0	Feb. 1873
6000 Tincroft, c, t, Illogan	9 0 0	31	30 31	30 31	47 8 0	0 5 0	Aug. 1874
512 Tretoil, t, Bodmin	2 0 0	-	-	-	0 1 0	0 1 0	Mar. 1874
15000 Trumpet Consols, t, Helston	6 5 0	3	3 3 1/2	3 3 1/2	9 11 0	0 10 0	Nov. 1872
15000 Van, t, Llandioedd*	4 5 0	24	22 24	22 24	13 9 6	0 10 0	Oct. 1874
8000 W. Chiverton, t, Perranzabuloe*	10 0 0	2	1 3 2	1 3 2	62 10 0	0 0 0	June 1873
512 West Tolgus, t, Redruth	98 0 0	77 2	70 72	70 72	1 0 0	0 1 0	Aug. 1874
2045 West Welsh Francis, t, Illogan	27 3 9	11	9 14 10 1/2	9 14 10 1/2	3 12 6	0 5 0	Aug. 1872
512 Wheat Bassett, c, Illogan	5 2 8	2 2 2	2 2 2	2 2 2	82 2 3	0 10 0	May 1872
4296 Wheat Kitty, t, St. Agnes	5 4 6	6	5 1/2 6 1/2	5 1/2 6 1/2	0 1 0	0 1 0	Jan. 1873
10000 Wheat Mair, t, St. Dennis*	15 17 6	-	-	-	0 1 0	0 1 0	Jan. 1873
80 Wheat Owles, t, St. Just*	76 5 0	75	70 75	72 2	52 2 10	0 4 0	Sept. 1874
12000 Wheat Russell, t, Tavistock	1 0 0	-	-	-	0 2 0	0 2 0	Jan. 1873
15000 Wheat Tregoss, t, Roche	1 0 0	-	-	-	0 1 0	0 1 0	May 1873
10000 Wheat Whisper, t, c, Warleggan*	1 0 0	-	-	-	0 1 6	0 6 0	May 1873
25000 Wicklow, c, s-l, t, Wicklow*	2 10 0	-	-	-	52 9 0	0 2 6	Mar. 1872

## FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Clos. Pr.	Last Call.
85500 Alamillos, t, Spain*	2 0 0	13 1/2	13 1/2	13 1/2	1 5 9
30000 Almada and Trito Consol., s-l*	1 0 0	3 4	3 4	3 4	0 4 3
20000 Australian, c, South Australias* (24 part pd.)	7 7 6	13 1/2	13 1/2	13 1/2	0 2 0
10000 Battle Mountain, t, (6240 part pd.)	5 0 0	2 4	2 4	2 4	0 10 0
15000 Birdseye Creek, g, California*	4 0 0	2 4	2 4	2 4	0 17 4
6000 Bensberg, t, Germany*	10 0 0	-	-	-	0 17 4
12320 Burra Burra, * c, So. Australia	5 0 0	-	-	-	56 0 0
20000 Cape Copper Mining*, * So. Africa.	7 0 0	29	26 28	28	17 15 0
40000 Cedar Creek, g, California*	5 0 0	13 1/2	13 1/2	13 1/2	0 6 0
80000 Central American Association*	18 0 0	18	18	18	0 10 0
15000 Chicago, t, Utah*	10 0 0	3 2	3 2	3 2	0 9 6
21000 Colorado Terrible, s-l, Colorado*	5 0 0	3 1/2	3 1/2	3 1/2	0 9 6
7612 Don Pedro North del Rey*	18 18 0	6 3			